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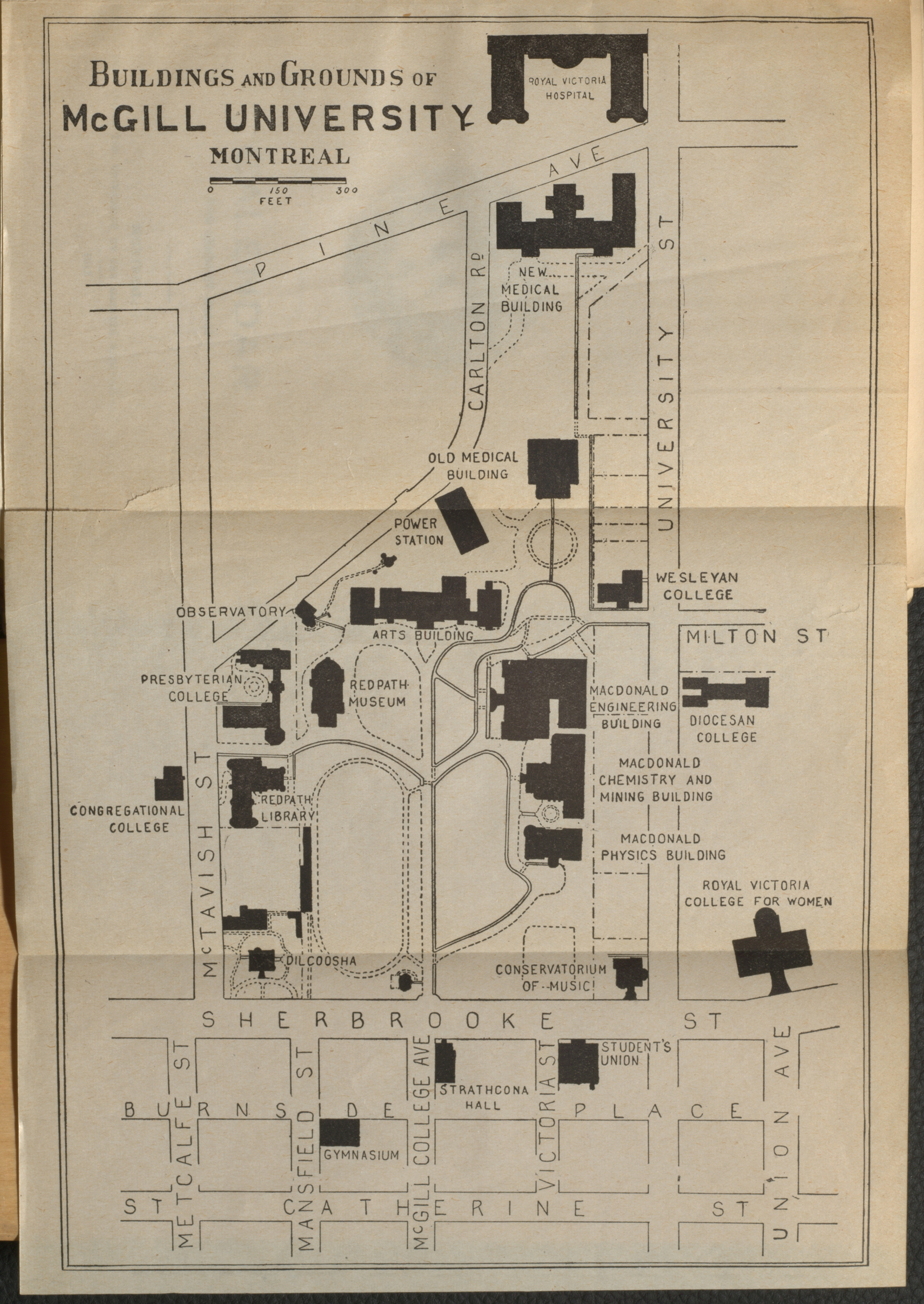
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MONTREAL

FOUNDED UNDER BEQUEST OF THE HON. JAMES McGILL;
ESTABLISHED AS A UNIVERSITY BY ROYAL
CHARTER IN 1821, AND REORGANIZED
UNDER AN AMENDED CHARTER
IN 1852



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ACADEMICAL YEAR, 1913-1914.

SEPTEMBER, 1913.

1	Monday	Summer Schools in Applied Science open.
2	Tuesday	
3	Wednesday	
4	Thursday	
5	Friday	
6	Saturday	
7	**SUNDAY**	
8	Monday	
9	Tuesday	
10	Wednesday	
11	Thursday	Finance Committee.
12	Friday	Last day for receiving applications for the Matriculation Examination.
13	Saturday	
14	**SUNDAY**	
15	Monday	
16	Tuesday	
17	Wednesday	
18	Thursday	
19	Friday	Exhibition, Scholarship and Supplemental Examinations in Arts. Strathcona Medical Buildings opened, 1901.
20	Saturday	
21	**SUNDAY**	
22	Monday	Matriculation, Examination begins. Meeting of Governors. Conservatorium of Music opens.
23	Tuesday	
24	Wednesday	
25	Thursday	
26	Friday	
27	Saturday	
28	**SUNDAY**	
29	Monday	
30	Tuesday	Special Registration day for new Students. Opening lecture in Medicine.

OCTOBER, 1913.

1	Wednesday	Special Registration day for students previously enrolled. Opening address by the Principal at 4 p.m. in R. V. C.
2	Thursday	Lectures begin in Arts, Applied Science and Law. Physics Building Committee.
3	Friday	Meeting of Faculty of Arts. Meeting of Teachers' Training Committee.
4	Saturday	Meeting of Faculty of Medicine.
5	**SUNDAY**	
6	Monday	Founder's Birthday. Library Committee. Meeting of Faculty of Applied Science. Museum Committee.
7	Tuesday	
8	Wednesday	Regular Meeting of Corporation.
9	Thursday	Finance Committee.
10	Friday	William Molson Hall opened, 1862. Summer Essays in Applied Science to be sent in.
11	Saturday	Interclass Sports.
12	**SUNDAY**	
13	Monday	
14	Tuesday	Conservatorium of Music opened, 1904.
15	Wednesday	
16	Thursday	
17	Friday	Meeting of Faculty of Arts. University Sports.
18	Saturday	
19	**SUNDAY**	
20	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
21	Tuesday	
22	Wednesday	
23	Thursday	
24	Friday	
25	Saturday	
26	**SUNDAY**	
27	Monday	Meeting of Governors.
28	Tuesday	
29	Wednesday	
30	Thursday	
31	Friday	Redpath Library opened, 1893.

NOTE.—The University Library is closed on Thanksgiving Day.

NOVEMBER, 1913.

1	Saturday	Meeting of Faculty of Medicine.
2	**SUNDAY**	
3	Monday	Meeting of Faculty of Applied Science.
4	Tuesday	
5	Wednesday	
6	Thursday	
7	Friday	Meeting of Faculty of Arts.
8	Saturday	
9	**SUNDAY**	
10	Monday	
11	Tuesday	
12	Wednesday	
13	Thursday	Finance Committee.
14	Friday	
15	Saturday	
16	**SUNDAY**	
17	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
18	Tuesday	
19	Wednesday	
20	Thursday	
21	Friday	Meeting of Faculty of Arts.
22	Saturday	
23	**SUNDAY**	
24	Monday	Meeting of Governors.
25	Tuesday	
26	Wednesday	
27	Thursday	
28	Friday	
29	Saturday	
30	**SUNDAY**	

DECEMBER, 1913.

1	Monday	Meeting of Faculty of Applied Science.
2	Tuesday	
3	Wednesday	Meeting of Academic Board.
4	Thursday	Physics Building Committee.
5	Friday	Meeting of Teachers' Training Committee. Meeting of Faculty of Arts.
6	Saturday	Meeting of Faculty of Medicine.
7	**SUNDAY**	
8	Monday	Museum Committee. Library Committee.
9	Tuesday	
10	Wednesday	Regular Meeting of Corporation.
11	Thursday	Finance Committee.
12	Friday	Lectures for first term in Arts end.
13	Saturday	
14	**SUNDAY**	
15	Monday	Christmas Examinations in Arts begin. Engineering Building Committee. Chemistry and Mining Building Committee.
16	Tuesday	
17	Wednesday	
18	Thursday	
19	Friday	Meeting of Faculty of Arts.
20	Saturday	Chemistry and Mining Building opened, 1898. Last day of lectures in Law and Applied Science.
21	**SUNDAY**	
22	Monday	Meeting of Governors.
23	Tuesday	
24	Wednesday	
25	Thursday	Christmas Day. Library closed.
26	Friday	
27	Saturday	
28	**SUNDAY**	
29	Monday	
30	Tuesday	
31	Wednesday	

JANUARY, 1914.

1	Thursday	
2	Friday	
3	Saturday	Meeting of Faculty of Medicine.
4	**SUNDAY**	
5	Monday	Second Term opens in Faculties of Arts, Medicine and Law. Lectures resumed in Applied Science. Meeting of Faculty of Applied Science.
6	Tuesday	
7	Wednesday	
8	Thursday	Finance Committee.
9	Friday	Meeting of Faculty of Arts.
10	Saturday	
11	**SUNDAY**	
12	Monday	
13	Tuesday	
14	Wednesday	
15	Thursday	Lectures for first term in Applied Science end.
16	Friday	
17	Saturday	
18	**SUNDAY**	
19	Monday	First Term Examinations in Applied Science begin. Engineering Building Committee. Chemistry and Mining Building Committee.
20	Tuesday	
21	Wednesday	Second Term opens in Applied Science.
22	Thursday	
23	Friday	Meeting of Faculty of Arts.
24	Saturday	
25	**SUNDAY**	
26	Monday	Meeting of Governors.
27	Tuesday	
28	Wednesday	
29	Thursday	
30	Friday	
31	Saturday	

FEBRUARY, 1914.

1	**SUNDAY**	
2	Monday	Meeting of Faculty of Applied Science.
3	Tuesday	
4	Wednesday	
5	Thursday	Physics Building Committee.
6	Friday	Meeting of Teachers' Training Committee. Meeting of Faculty of Arts.
7	Saturday	Meeting of Faculty of Medicine.
8	**SUNDAY**	
9	Monday	Museum Committee. Library Committee.
10	Tuesday	
11	Wednesday	Regular Meeting of Corporation.
12	Thursday	Finance Committee.
13	Friday	
14	Saturday	
15	**SUNDAY**	
16	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
17	Tuesday	
18	Wednesday	
19	Thursday	
20	Friday	Meeting of Faculty of Arts.
21	Saturday	
22	**SUNDAY**	
23	Monday	
24	Tuesday	Physics and Engineering Buildings opened, 1893. Meeting of Governors.
25	Wednesday	Ash Wednesday. No lectures.
26	Thursday	
27	Friday	
28	Saturday	

MARCH, 1914.

1	**SUNDAY**	
2	Monday	Meeting of Faculty of Applied Science.
3	Tuesday	
4	Wednesday	Meeting of Academic Board.
5	Thursday	
6	Friday	Meeting of Faculty of Arts.
7	Saturday	Meeting of Faculty of Medicine.
8	**SUNDAY**	
9	Monday	
10	Tuesday	
11	Wednesday	
12	Thursday	Finance Committee.
13	Friday	
14	Saturday	
15	**SUNDAY**	
16	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
17	Tuesday	
18	Wednesday	
19	Thursday	
20	Friday	Meeting of Faculty of Arts.
21	Saturday	
22	**SUNDAY**	
23	Monday	Meeting of Governors.
24	Tuesday	
25	Wednesday	
26	Thursday	
27	Friday	
28	Saturday	
29	**SUNDAY**	
30	Monday	
31	Tuesday	

APRIL, 1914.

1	Wednesday	
2	Thursday	Physics Building Committee.
3	Friday	Meeting of Teachers' Training Committee. Meeting of Faculty of Arts.
4	Saturday	Meeting of Faculty of Medicine.
5	**SUNDAY**	Macdonald Engineering Building burned, 1907.
6	Monday	Library Committee. Meeting of Faculty of Applied Science. Museum Committee.
7	Tuesday	
8	Wednesday	Regular Meeting of Corporation.
9	Thursday	Finance Committee.
10	Friday	Good Friday. No lectures. Library closed.
11	Saturday	
12	**SUNDAY**	Easter Sunday.
13	Monday	Last day of Lectures in Arts and Applied Science.
14	Tuesday	
15	Wednesday	
16	Thursday	Medical Building burned, 1907.
17	Friday	Last day for receiving theses for higher degrees. Last day of Lectures in Law. Meeting of Faculty of Arts. Sessional examinations in Arts and Applied Science begin.
18	Saturday	
19	**SUNDAY**	
20	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
21	Tuesday	
22	Wednesday	
23	Thursday	
24	Friday	
25	Saturday	
26	**SUNDAY**	
27	Monday	Meeting of Governors. New Engineering Building opened, 1909.
28	Tuesday	
29	Wednesday	
30	Thursday	

MAY, 1914.

1	Friday	Meeting of Faculty of Arts.
2	Saturday	Meeting of Faculty of Medicine.
3	**SUNDAY**	
4	Monday	Meeting of Faculty of Applied Science.
5	Tuesday	
6	Wednesday	
7	Thursday	
8	Friday	
9	Saturday	
10	**SUNDAY**	
11	Monday	
12	Tuesday	Convocation for Conferring Degrees in Arts, Law and Applied Science.
13	Wednesday	
14	Thursday	Finance Committee.
15	Friday	
16	Saturday	
17	**SUNDAY**	
18	Monday	Engineering Building Committee. Chemistry and Mining Building Committee.
19	Tuesday	
20	Wednesday	
21	Thursday	
22	Friday	
23	Saturday	
24	**SUNDAY**	Victoria Day.
25	Monday	Meeting of Governors.
26	Tuesday	
27	Wednesday	
28	Thursday	
29	Friday	
30	Saturday	
31	**SUNDAY**	

JUNE, 1914.

1	Monday	Graduate course in Medicine begins.
2	Tuesday	
3	Wednesday	
4	Thursday	Physics Building Committee.
5	Friday	New Medical Building opened, 1911. Meeting of Teachers' Training Committee.
6	Saturday	
7	**SUNDAY**	
8	Monday	Museum Committtee. Library Committee.
9	Tuesday	
10	Wednesday	Regular Meeting of Corporation.
11	Thursday	Finance Committee.
12	Friday	
13	Saturday	
14	**SUNDAY**	
15	Monday	Engineering Building Committtee. Chemistry and Mining Building Committee.
16	Tuesday	
17	Wednesday	
18	Thursday	
19	Friday	
20	Saturday	
21	**SUNDAY**	
22	Monday	Meeting of Governors.
23	Tuesday	
24	Wednesday	
25	Thursday	
26	Friday	
27	Saturday	
28	**SUNDAY**	
29	Monday	
30	Tuesday	

JULY, 1914.

1 Wednesday	Dominion Day. Library closed.
2 Thursday	
3 Friday	
4 Saturday	
5 SUNDAY	
6 Monday	
7 Tuesday	
8 Wednesday	
9 Thursday	
10 Friday	
11 Saturday	
12 SUNDAY	
13 Monday	
14 Tuesday	
15 Wednesday	
16 Thursday	
17 Friday	
18 Saturday	
19 SUNDAY	
20 Monday	
21 Tuesday	
22 Wednesday	
23 Thursday	
24 Friday	
25 Saturday	
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	
30 Thursday	
31 Friday	

AUGUST, 1914.

1 Saturday	
2 SUNDAY	
3 Monday	
4 Tuesday	
5 Wednesday	
6 Thursday	
7 Friday	
8 Saturday	
9 SUNDAY	
10 Monday	
11 Tuesday	
12 Wednesday	
13 Thursday	
14 Friday	
15 Saturday	
16 SUNDAY	Peter Redpath Museum opened, 1882.
17 Monday	
18 Tuesday	
19 Wednesday	
20 Thursday	
21 Friday	
22 Saturday	
23 SUNDAY	
24 Monday	
25 Tuesday	
26 Wednesday	
27 Thursday	
28 Friday	
29 Saturday	
30 SUNDAY	
31 Monday	

MATRICULATION EXAMINATION TIME TABLE.

SEPTEMBER, 1913.

MONDAY, SEPTEMBER 22ND.

Morning	9-11.—English Literature.
	11-12.30.—Botany; Chemistry.
Afternoon	2.30-4.30.—English Composition.

TUESDAY, SEPTEMBER 23RD.

Morning	9-11.—Latin Authors; Arithmetic.*
	11-12.30.—Trigonometry.
Afternoon	2.30-4.30.—Latin Composition and Sight; English Grammar.*

WEDNESDAY, SEPTEMBER 24TH.

Morning	9-11.—Algebra, Part I.
	11-1.—French Grammar; German Grammar.
Afternoon	2.30-4.30.—French Translation; German Translation.

THURSDAY, SEPTEMBER 25TH.

Morning	9-12.—Geometry, Part I.
Afternoon	2.30-4.30.—History; Physics; Physiography.

FRIDAY, SEPTEMBER 26TH.

Morning	9-11.—Algebra, Part II.; Greek Authors.
Afternoon	2.30-5.—Geometry, Part II.; Greek Composition and Sight.

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*For candidates intending to enter the Faculty of Agriculture or the Department of Music.

EXAMINATION TIME TABLES.—Faculty of Arts.

EXHIBITION, SCHOLARSHIP AND SUPPLEMENTAL EXAMINATIONS, SEPTEMBER, 1913.

DATE.	Hour.	Supp. to First Year Sessional.	Second Year Exhibitions.	Supp. to Second Year Sessional.	Scholarships (Third Year).	Supp. to Third Year Sessional.*
Friday 19	9	English Literature.	English Literature (Shakspere); History.	English Literature.	English Literature (Shakspere and Milton).	English Literature.
	2	English Composition and History.	English Literature (Milton, Johnson).	English Composition.	English Literature (Burke and Arnold).	English Composition.
Monday 22	9	Latin Books.	Latin Books.	Latin Books.	Latin Texts.	Latin Books.
	2	Latin Composition, Sight Translation and History.	Latin Composition, Sight Translation and History.	Latin Composition, Sight Translation, History and Literature.	Latin Composition and Sight, and Roman History.	Latin Composition, Sight Translation, History and Literature.
Tuesday.....23	9	French.	French Texts.	French.	French Books.	French. Botany.
	2	French.	German Texts.	French. Semitics.	French Composition and Sight.	German.
Wednesday..24	9	Algebra.	Geometry (Major), Geometry and Trigonometry (Minor).	Algebra.	Animal Biology. Analytical Geometry.	Mathematics.
	2	Trigonometry.	French Composition and Sight.	Psychology.	German Books. Plant Biology. Logic.	Chemistry.
Thursday....25	9	Greek Books. German.	Greek Books, Algebra (Minor), Algebra, Trigonometry and Theory of Equations (Major).	Greek Books. Logic. German.	Greek Texts. Physics. Psychology.	Greek Books.
	2	Greek Composition, Sight Translation, and History. German.	Greek Composition, Sight Translation and History.	Greek Composition, Sight Translation and History. Animal Biology. German.	Chemistry. Greek Composition, Sight and History. Economics.	Greek Composition, Sight Translation. History and Literature.
Friday.....26	9	Physics.	German Composition and Sight.	Conics and Solid Geometry. Plant Biology.	Infinitesimal Calculus. German Comp. and Sight.	Political Economy.
	2	Geometry.	Physics.	Chemistry. History and Economics.	Economics. Modern History and English Composition. Philosophy (Berkeley).	Political Science.

*Periods for other subjects to be arranged at the time of the Examination.

EXAMINATION TIME TABLES.

Faculty of Arts.

Christmas Examinations, 1913.

Morning examinations commence at 9; afternoon examinations at 2.30.

	First Year.	Second Year.	Third & Fourth Years.
Monday, Dec. 15th ..A.M.	Geometry.	English.	Geology.
" P.M.	Latin.	Logic. Hebrew.	History; Mathematics; German; Botany; Physics.
Tuesday, Dec. 16th..A.M.	French.	Economics.	Economics; Latin; Chemistry; Hebrew; English.
" P.M.	English.	Latin.	Philosophy (Ethics); French.
Wednesday, Dec. 17th A.M.	Physics.	Mathematics. Biology. Chemistry.	Political Science; Zoology.
" P.M.	Greek.	French.	Greek; Psychology; Mechanics.
Thursday, Dec. 18th..A.M.	German.	Greek.	Philosophy (Theory of Knowledge); English.
" P.M.	History.	German.	Astronomy.
Friday, Dec. 19th....A.M.	Trigonometry.	History. Psychology.	Education.

EXAMINATION TIME TABLES.

FACULTY OF ARTS.

SESSIONAL EXAMINATIONS, 1914.

Morning examinations commence at 9; afternoon examinations at 2.30.

DAY AND DATE.	FIRST YEAR.	SECOND YEAR.	THIRD & FOURTH YEARS.
Friday, April 17th.....A.M.			English Composition.
Monday, April 20th.....A.M.	Algebra.	English.	Geology; Sanskrit.
" P.M.	History.	English.	Geology; Sanskrit.
Tuesday, April 21st.....A.M.	Latin.	Logic; Heb.	Hist.; Math.; German; Botany; Physics.
" P.M.	Latin.	Psychology.	Hist.; Math.; German; Botany; Physics.
Wednesday, April 22nd. A.M.	French.	Economics.	Econ.; Latin; Chem.; Hebrew; English (Courses 3B and 4B).
" P.M.	French.	History.	Econ.; Latin; Chem.; English Courses 3B and 4B).
Thursday, April 23rd....A.M.	English.	Latin.	Philosophy (Ethics); French.
" P.M.	English.	Latin.	Philosophy (Ethics); French.
Friday, April 24th.....A.M.	Physics.	Algebra; Zoology; Chemistry.	Political Science; Zoology.
" P.M.	Trigonometry.	Spherical Trigonometry; Botany; Chemistry.	Political Science; Zoology.
Monday, April 27th.....A.M.	Greek.	French.	Greek; Psychology; Mechanics.
" P.M.	Greek.	French.	Greek; Psychology.
Tuesday, April 28th....A.M.	German.	Greek.	Philosophy (Theory of Knowledge); English Courses 4A and 3A): Comparative Philology.
" P.M.	German.	Greek.	Philosophy (Theory of Knowledge); English (Courses 4A and 3A); Comparative Philology.
Wednesday, April 29th..A.M.		German.	Education.
" P.M.		German.	Education.

TIME TABLES OF LECTURES.

FACULTY OF ARTS.

HOUR.	FIRST YEAR MEN.	FIRST YEAR WOMEN.	SECOND YEAR.	THIRD & FOURTH YEARS.
Lectures at 9, omitting Friday	Mathematics.	English. (Comp., Mon.; Lit. Wed.)	English—Men. French—Women. German—Men (Fri.)	Sanskrit. Geology. (Mon., Wed., Thurs.)
Lectures at 10 omitting Tuesday	Latin.	French.	Logic and Psychology. German—Men (Tues.) Hebrew.	History. Mathematics. German. Botany. Physics.
Lectures at 11, omitting Thursday	French. History (Thurs.)	Latin.	Economics and History. German—Women. German—Men (Thurs.)	Economics. Latin. Chemistry. Hebrew. English. (Tues. & Wed., 3B; Mon. & Fri., 4B). Eng. Comp., III (Thurs.)
Lectures at 12, omitting Wednesday	English. (Comp., Mon.; Lit., Fri.)	Mathematics. History (Wed).	Latin. German—Men. (Wed.)	Philosophy (Ethics). French. Eng. Comp., IV (Wed.)
Lectures at 2, omitting Wednesday	Physics. (Tues. & Thurs.)	German.	Mathematics. (Tues., Thurs. & Fri. Zoology. (Mon. & Thurs.) Botany (Mon. & Thurs.) Chemistry.	Political Science. Zoology (Tues. & Fri.)
Lectures at 3, omitting Wednesday	Greek.	Physics. (Tues. & Thurs.) Physical Education. (Mon. & Fri.)	English—Women. French—Men.	Greek. Psychology. Mechanics. (Mon. & Thurs.) Astronomy (Tues.&Fri.)
Lectures at 4, omitting Wednesday	German.	Greek.	Greek.	Philosophy (Theory of knowledge.) English. (Tues. & Fri., 4A; Mon. & Thurs., 3A). Comp. Philology. (Tues. & Thurs.)
Lectures at 5, omitting Wednesday				Roman Law. Education. Constitutional Law. (Tues. & Fri.)

Laboratory periods and hours for Honour classes will be arranged at the commencement of the session.

The hours for Physical Education for women students of the second, third and fourth years will be arranged by the department.

McGill University.

HISTORY AND CONSTITUTION.

Foundation and Early History.

McGill University owes its origin to a private endowment. It was founded by the Hon. James McGill, a leading merchant and public-spirited citizen of Montreal, who died in 1813. By his will, dated January 8th, 1811, he bequeathed his property of Burnside (consisting of 46 acres of land with the dwelling house and other buildings thereon) and a sum of £10,000 in money to found a college in a provincial university, the erection of which had already been provided for by the British Government. The four trustees appointed under his will were directed to convey the property of the bequest to the Royal Institution for the Advancement of Learning, a body which, in 1802, had been incorporated by the Legislature "for the establishment of free schools and the advancement of learning" in the Province of Quebec. The conditions upon which the property was to be transferred to the Royal Institution for the Advancement of Learning were, mainly, that that Institution should, within ten years after the testator's decease, erect and establish on his Burnside estate "a University or College, for the purposes of education and the advancement of learning in this Province," and that the college, or one of the colleges in the University, if established, should "be named and perpetually be known and distinguished by the appellation of McGill College." Owing to persistent opposition by the leaders of one section of the people to any system of governmental education and to the refusal by the Legislature to make the grants of land and money which had been

promised, the proposed establishment of the provincial university by the British Government was abandoned.

In so far as the McGill College was concerned, however, the Royal Institution at once took action by applying for a Royal Charter. Such a charter was granted in 1821, and the Royal Institution prepared to take possession of the estate, but, owing to protracted litigation, this was not surrendered to them till 1829, when the work of teaching was begun in two faculties, Arts and Medicine. The record of the first thirty years of the University's existence is an unbroken tale of financial embarrassment and administrative difficulties. The charter was cumbrous and unwieldy, and unsuited to a small college in the circumstances of this country, and the University, with the exception of its medical faculty, became almost extinct. But after thirty years the citizens of Montreal awoke to the value of the institution which was struggling in their midst. Several gentlemen undertook the responsibility of its reorganization, and, in 1852, an amended charter was secured. The Governor-General of Canada for the time being, Sir Edmund Head, became interested in its fortunes, and in 1855, with the advent of a new Principal, an era of progress and prosperity began.

A Course in Law was begun in connection with the Faculty of Arts, in 1848, and the department was established as a separate faculty in 1853. The Faculty of Applied Science was not regularly organized till 1878, but a course in Engineering, which was amplified into the Department of Practical Science in 1871, was given under the Faculty of Arts as far back as 1856. The Faculty of Agriculture was established in 1907.

Principal Dates in the History of the University.

First Charter obtained.—1821.
College opened.—1829.
Amended Charter secured.—1852.
William Molson Hall opened.—October 10th, 1862.
Peter Redpath Museum opened.—August 16th, 1882.
Physics and Engineering Buildings opened.—February 24th, 1893.

Redpath Library opened.—October 31st, 1893.
Chemistry and Mining Building opened.—December 20th, 1898.
Royal Victoria College opened.—September 4th, 1899.
Strathcona Medical Buildings opened.—September 19th, 1901.
Conservatorium of Music opened.—October 14th, 1904.
Macdonald Engineering Building burned.—April 5th, 1907.
Macdonald College opened.—November 5th, 1907.
Medical Building burned.—April 16th, 1907.
New Engineering Building opened.—April 27th, 1909.
New Medical Building opened.—June 5th, 1911.
Gift of Molson and Law properties (comprising about 25 acres), from Sir William C. Macdonald.—July 4th, 1911.

One million five hundred and fifty thousand dollars raised (chiefly from Montreal citizens) in aid of the funds of the University.—November 20-24, 1911.

Government of the University.

By the amended Charter "the Governors, Principal, and Fellows" of the University are constituted a body politic and corporate, with all the usual rights and privileges of corporate bodies. The supreme authority, however, is vested in the Crown, and is exercised by His Excellency the Governor-General of Canada, for the time being, as **Visitor**. This is a special and important feature of the constitution, for, while it gives the University an imperial character and removes it at once from any merely local or party influence, it secures the patronage of the head of the political system of the country.

The **Governors** of the University are the members of the Royal Institution for the Advancement of Learning, above mentioned, and in them are vested the management of finances, the passing of University statutes and ordinances, the appointment of professors, and other important duties. Their number is limited to twenty-five, and vacancies are filled by the nomination of the remaining members, with the approval of the Visitor. The President of the Board of Governors is, *ex-officio,* Chancellor of the University.

The **Principal** is the academic head and chief administrative officer. He is appointed by the Board of Governors (of

which body he is a member, *ex-officio*). He also holds the office of Vice-Chancellor of the University.

The **Fellows** (42 in number) are selected with reference to the representation of all the faculties and departments of the University, and of the graduates, affiliated colleges, and other bodies.

The Governors, Principal and Fellows together, constitute the **Corporation**, the highest academical body. Its powers are fixed by statute, and include the framing of all regulations touching courses of study, matriculation, graduation, discipline and the granting of degrees.

The administration of these regulations, along with direct responsibility for the conduct of the educational work of the University, is entrusted to the several **Faculties**,—Arts, Medicine, Law, Applied Science, and Agriculture.

The Principal, the Deans of the several Faculties, the Professors and Associate Professors, and other members, not exceeding ten in number, of the teaching staff, constitute the **Academic Board** of the University, with the duty of considering such matters as pertain to the interests of the University as a whole, and of making recommendations concerning the same.

INCORPORATED AND AFFILIATED COLLEGES.

Incorporated Colleges.

Macdonald College.—This is an incorporated college of the university, situated at Ste. Anne de Bellevue, about twenty miles from Montreal. It consists of three departments:—the School of Agriculture, the School of Household Science, and the School for Teachers. Courses leading to the Bachelor's and Master's degrees in agriculture are under the control of the Corporation of McGill University; all the short term courses in agriculture, as well as the courses in domestic science, are under the direction of the Macdonald College Committee; and those for diplomas to teach in the Province of Quebec are subject to the immediate supervision of the Teachers' Training Committee. Further information is given on page 366, and full details as to the college buildings, courses, terms of admission, fees, etc., will be found in the Macdonald College Announcement, which will be sent on application to the Principal, Macdonald College, Que.

The Royal Victoria College is the women's college of McGill University and incorporated therein. The instruction for the first two years in Arts (except in the case of laboratory work), is given wholly in the college building. For further particulars, see page 360.

The McGill University College of British Columbia.—This is a branch of the University in British Columbia, with two teaching centres. In the main college at Vancouver the courses are conducted up to the end of the third year in the Faculty of Arts and of the second year in the Faculty of Applied Science. In the branch at Victoria students are able to complete the work of the first two years in Arts. Detailed information is given in the College Bulletin, which may be had on application to the Registrar, McGill University College of British Columbia, Vancouver, B.C.

Affiliated Colleges.

Mount Allison, Acadia and Alberta Universities are affiliated to McGill University to the extent that students who have completed the two-year course in Engineering given by these universities are admitted directly to the third year in the courses of Civil Engineering, Mining Engineering, Railway Transportation, Metallurgical Engineering, Chemical Engineering, Mechanical Engineering, and Electrical Engineering of the Faculty of Applied Science of McGill University.

Students from these universities entering the third year of any of the first three of these courses must take the summer school in surveying, which opens at Montreal on or about September 1st; those entering the third year in Metallurgical Engineering or Chemical Engineering will take the summer school in chemistry.

Students from these universities entering the courses in Mechanical or Electrical Engineering are advised to take the summer school in mechanical drawing, physics and shopwork, which opens at McGill University on September 1st, but they are not required to do so.

Royal Military College.—Graduates of the Royal Military College of Kingston are admitted to the third year in the several departments of the Faculty of Applied Science above mentioned. They must in all cases take the respective summer schools pertaining to these several courses, which summer schools open at Montreal on or about September 1st.

Affiliated Theological Colleges.

The Theological Colleges named below are affiliated to the University under the following arrangement:—Students in these institutions who are pursuing a double course in Arts and Theology (six years at least) will be exempted from a half course in Arts in each of the third and fourth years or a whole course in either.

The Congregational College of Canada, Montreal.—Principal, Rev. E. M. Hill, D.D., 58 McTavish St.

The Diocesan College of Montreal.—Principal, Rev. E. I. Rexford, M.A., LL.D., 201 University St.

The Presbyterian College, Montreal, in connection with the Presbyterian Church in Canada.—Principal, Rev. John Scrimger, M.A., D.D., 69 McTavish St.

The Wesleyan College of Montreal.—Principal, Rev. James Smyth, LL.D., 228 University St.

A movement was inaugurated in the session 1912-13 for a large measure of co-operation among the above Colleges, with the result that a considerable portion of the work which has hitherto been done separately by each is now taken in joint classes. For Calendars and all necessary information, apply to the Principals of the several Colleges, or to the Rev. Professor D. J. Fraser, 67 McTavish street.

Affiliation to Other Universities.

The University is affiliated to the universities of Oxford, Cambridge and Dublin, under conditions which allow an undergraduate who has taken two years' work, and has passed the second year sessional examination in Arts, to pursue his studies and take his degree at any of those universities on a reduced period of residence.

FACULTIES AND COURSES.

The educational work of the University is carried on in McGill College, the Royal Victoria College for Women, and other University buildings in Montreal; and also in Macdonald College at Ste. Anne de Bellevue.

COURSES FOR DEGREES AND DIPLOMAS.

The several courses offered by the University are as follows:—

In the Faculty of Arts.

For the degree of Bachelor of Arts.
" " " " Bachelor of Science.
" " Diploma of Commerce.

The undergraduate courses of study which lead to the degree of B.A. or of B.Sc., extend over four sessions of about seven and a half months each. Full particulars regarding these courses are given in the University Calendar, which will be sent on application. In the second, third and fourth years extensive options are provided, and certain exemptions are also allowed to professional students. (See also page 91.)

The undergraduate course in Arts can be taken along with the undergraduate course in Medicine, in seven years, or with that in Applied Science in six years. (See pages 103 and 104.)

The degrees of B.A. and B.C.L. can be obtained in six years and, under special circumstances, in five years. (See page 105.)

Full particulars regarding the course for the Diploma of Commerce are given on page 163.

The courses in Arts are open to women (who are educated mainly in separate classes) on equal terms with men. Residential accommodation for women students is provided in

the Royal Victoria College. (For further particulars see page 360.)

Holders of the degree of B.A. from this University are admitted to the study of the learned professions, without preliminary examination, in the different Provinces of Canada, and in Great Britain and Ireland, and elsewhere. They will also be granted Academy diplomas to teach in the Province of Quebec, provided they have passed an examination in pedagogy and have taught, under supervision, for the time required by law.

In the Faculty of Applied Science.

For the degree of Bachelor of Architecture (B. Arch.)

For the degree of Bachelor of Science (B.Sc.), in the departments of chemistry, chemical engineering, civil engineering, electrical engineering, mechanical engineering, metallurgy, metallurgical engineering, mining engineering, and railway transportation.

The undergraduate courses of study extend over four sessions, averaging (with summer sessions) about eight months each, and provide a thorough professional training in the departments mentioned above. Full particulars are given on pages 168 to 267.

The undergraduate course in Arts can be taken along with the undergraduate course in Applied Science in six years. (See page 103.)

In the Faculty of Law.

For the degree of Bachelor of Civil Law (B.C.L.)

The undergraduate course extends over three sessions of eight months each, and leads to the degree of Bachelor of Civil Law (B.C.L.).

The undergraduate course in Arts can be taken along with the undergraduate course in Law in six years and, under special circumstances, in five years. (For full information regarding the Faculty of Law, see page 268.)

In the Faculty of Medicine.

For the degree of Doctor of Medicine and Master of Surgery (M.D., C.M.)

For the degree of Doctor in Dental Science (D.D.S.)

For the Diploma of Public Health.

The undergraduate course of study leading to the degree of M.D., C.M., extends over five sessions of eight months each, and that leading to the degree of Doctor in Dental Science extends over four sessions of the same length. For further information see pages 285 to 333.

The undergraduate course in Arts can be taken along with the undergraduate course in Medicine in seven years. (See page 104.)

The course in Public Health and Sanitary Science is open to those only who have graduated in Medicine, or who possess some other qualification for practice. Generally speaking, it occupies a period of three months.

In the Graduate School.

For the degrees of Master of Arts, Master of Science and Doctor of Philosophy.

Full information as to admission and departments in which studies are offered will be found on page 350, and can also be obtained from the chairman or secretary of the Committee on Graduate Studies to which Committee are also submitted all applications for the degrees of D.Sc. and D. Litt. These degrees are granted only on their recommendation. The chairman of the Committee is Professor James Harkness and the secretary, Dr. C. J. MacMillan.

In Macdonald College.

For the degree of Bachelor of Science in Agriculture.

Other courses in the School of Agriculture.

Courses in the School of Household Science.

The several courses for teachers' diplomas.

The course of study for the degree of Bachelor of Science in Agriculture extends over four sessions of about eight months each. It aims to provide a thorough theoretical and practical training in the several branches of the science. (See also page 366.)

The Macdonald College announcement containing full details as to buildings, courses, terms of admission, fees, etc., can be obtained from the Principal, Macdonald College P. O., Que.

In the Conservatorium of Music.

For the degrees of Bachelor of Music (Mus. Bac.) and Doctor of Music (Mus. Doc.).

For the diploma of Licentiate in Music, and the several Grade examination certificates.

Students are admitted as *Regular Students* taking an organized course leading to the diploma of Licentiate in Music or the degree of Bachelor of Music (see page 336), or as *Partial Students,* who, under certain conditions and after examination, can obtain certificates bearing the imprimatur of the University. Full details can be obtained on application to the Secretary of the McGill Conservatorium of Music, 323 Sherbrooke St. W., Montreal.

The Course in Military Science.

This course can be taken by undergraduates in Arts, Applied Science and Law. Particulars are given on page 346.

DEGREES.

I. ORDINARY DEGREES.

The degrees conferred by the University are as follows:—B.A., B.Sc., B. Arch., B.C.L., B.S.A., Mus. Bac., M.D. C.M., D.D.S., D.C.L., Mus. Doc., M.A., M.Sc., Ph.D., D.Sc., D. Litt., and LL.D. (Honorary.)

In order to obtain the degrees of B.A.; B.Sc.; B. Arch.; B.C.L.; B.S.A.; M.D., C.M.; and D.D.S., students are required to attend lectures (for length of courses, see pages 8 to 10), to complete the course of study for the degree sought, to pass all the prescribed examinations during the course, and any special examinations for graduation, and to perform such other exercises as may be prescribed to that end.

The requirements for degrees in Music are stated on page 336.

II. HIGHER DEGREES

All theses for higher degrees, in order to be accepted, must be sent to the chairman of the Committee on Graduate Studies before April 17th, 1914. The examination will be held in April. No thesis will be received, or examination granted, until the fee for the degree has been paid.

Degree of M.A.

For requirements see under "Graduate School," page 351.

Degree of M.Sc.

For requirements see under "Graduate School," page 352.

Degree of D.Litt.

Candidates for the degree of Doctor of Literature must be Masters of Arts, and graduates of at least five years' standing, who shall have distinguished themselves by special re-

search and learning in the domain of literature or philosophy. They are required to present a satisfactory thesis or published work.

Degree of D.Sc.

Candidates for the degree of Doctor of Science must be Masters of Arts, or Masters of Science, or Doctors of Medicine, and graduates of at least five years' standing, who shall have distinguished themselves by special research and learning in the domain of science. They are required to present a satisfactory thesis or published work.

Degree of Ph.D.

For requirements see under "Graduate School," page 353.

Degree of D.C.L.

Candidates for the degree of Doctor of Civil Law must be Bachelors of Civil Law of at least twelve years' standing. They are required to pass a special examination for the degree and to present a satisfactory thesis or published work on some subject selected or approved by the Faculty of Law. For details of the examination, etc., see page 280.

Degree of LL.D.

The degree of Doctor of Laws is given only as an honorary degree.

III. ADMISSION "AD EUNDEM GRADUM."

The following are the regulations applicable to admission "ad eundem gradum":—

Extract from the Statutes, Chap. VIII.

"Graduates of other universities desirous of admission to "the like degree in this University, may be so admitted by "the Corporation; due enquiry being first made as to their "moral character and sound learning, and opportunity given "to the several Faculties, or the Committee on Graduate "Studies, as may be required, to make such representation in "the premises as they may see fit. Provided always that,

"except in the case of candidates proceeding to a higher de-
"gree, such application for admission shall not be put to
"vote until after three months' notice, unless by unanimous
"consent, and shall not be ordered, if as many as five mem-
"bers of the Corporation shall vote against it."

Extracts from the Regulations of the Corporation.

"In all cases in which anyone is proposed for an 'ad
"eundem' degree, it shall be necessary for the member or
"members of the Corporation making such proposal, to state
"in writing therewith the grounds upon which the granting
"of such degree is advocated, and when the case shall be re-
"ferred to the Faculties, under Chap. VIII. of the Statutes,
"copies of such proposal and grounds shall be transmitted to
"the Faculties by the Registrar for their consideration."

Note. In considering applications under the above regulations, the Faculties will require as "grounds" the pursuit of a course of study or research in this University; association with the academic work of the University; or similar qualifications.

Admission "ad eundem gradum" is not granted merely as a titular distinction.

"The degree of Bachelor of Arts or Bachelor of Science,
"ad eundem, shall be granted only to candidates who are
"proceeding to a higher degree, the lower degree being
"granted only when the candidate has qualified for the
"higher."

"Graduates of all universities desiring an ad eundem
"degree of this University, as a condition of entering on a
"course of study leading to a higher degree, shall make appli-
"cation to the Committee on Graduate Studies, who shall
"thereupon report their recommendation to Corporation,
"which body shall immediately take action without previous
"reference to the various Faculties."

ENTRANCE REQUIREMENTS.

All matters regarding matriculation are under the control of a Matriculation Board, which is constituted as follows:

(a) The Heads of all Departments which may include matriculation subjects, *ex-officio*.

(b) The Deans of the several Faculties and the Registrar of the Faculty of Medicine.

(c) Such other members of the teaching staff (or others) as may be appointed annually by Corporation, the Faculty of Arts being given the power, in any emergency, to make an appointment, *pro tempore*.

I. REGULATIONS.

1. Matriculation examinations (for entrance into all Faculties) are held only in June and September—in June at McGill College and at the local centres named on page 16; in September, at McGill College and at Vancouver and Victoria only.

ALL INQUIRIES RELATING TO THE EXAMINATIONS SHOULD BE ADDRESSED TO THE REGISTRAR OF THE UNIVERSITY.

For the convenience of candidates in Great Britain, who are not otherwise qualified for entrance, an examination will be held regularly in London, Eng., each year, commencing on or about the 12th of June. The examination will be held in London, under the directorship of Dr. J. D. McClure. Full information regarding the exact date of the examination, fee, etc., may be obtained from the Honorary Representative of the University, W. A. Evans, Esq., M.A., Secretary Headmasters' Conference, 12 King's Bench Walk, Temple, London, E.C.

2. Every candidate for examination is required to fill up an application form and return the same with the necessary fee (for which see page 20) one month before the examination begins. Blank forms may be obtained from the Registrar.

No applications for examination in June will be received after May 20th.

3. Examinations will be held in June at the following centres, outside of the Province of Quebec:—Sydney, N.S.; Truro, N.S.; Rothesay, N.B.; Ottawa, Ont.; Brockville, Ont.; Peterborough, Ont.; North Bay, Ont.; Port Hope, Ont.; Toronto, Ont.; Hamilton. Ont.; St. Catharines, Ont.; Goderich, Ont.; Sault Ste. Marie, Ont.; Port Arthur, Ont.; Winnipeg, Man.; Regina, Sask.; Calgary, Alta.; Yale, B.C.; Summerland, B.C.; Vancouver, B.C.; Victoria, B.C.; Kingston, Jamaica and London, Eng.

Candidates who are not within easy reach of any of the above centres are advised to prepare for entrance by taking an examination recognized by the University, as shown on pages 18 and 19. In centres where not more than four candidates are writing the fee for each will be determined by the Registrar.

4. The matriculation examination may be taken in two parts, but in order to be valid for entrance it must be completed within two years from the date of the first attempt. At least four papers must be written at one time, except (a) in the case of candidates who have passed in that number at the June examination and who wish to take additional papers in the following September, and also (b) in the case of those who are not required to take as many as four papers to complete the examination. Credit will not be given for less than four papers on certificates which may be presented for exemption from the matriculation examination, and no certificate will be accepted which has been obtained under easier con-

ditions than those which are imposed on candidates who are attempting to qualify for entrance by taking the regular University examination.

5. In order to pass, a candidate must obtain 50% of the marks in each subject.

This regulation applies also in the case of candidates who present certificates.

6. Candidates for admission to the Faculties of Arts, Applied Science, Law, Agriculture and the Department of Music who have failed to complete the matriculation requirements will be allowed to enter the first year as conditioned undergraduates, provided (a) that they have not failed in more than two papers (which in the Faculty of Applied Science cannot both be in the mathematical section) and (b) that they have obtained at least 25% in the subjects in which they have failed and 50% of the aggregate.

This regulation applies also to candidates who seek to satisfy the matriculation requirements by means of certificates granted by other recognized examining bodies.

In order to be admitted to the Faculty of Medicine, a candidate must pass in every subject required.

Students conditioned in a language must attend a special tutorial class during their first session, for which a fee of $10.00 is exigible. Any student so conditioned who fails to attend this class with regularity will not be allowed to present himself for examination.

7. Matriculation certificates will be issued to candidates who have passed the entrance examination conducted by the University, but not to those who have qualified by means of certificates, except when the greater part of the requirements have been satisfied by passing the University examination.

8. The certificates and diplomas named below will, if submitted to the Registrar, be accepted *pro tanto* in lieu of the matriculation examination, *i.e.*, in so far as the subjects and

standard of the examination taken to obtain them are, to the satisfaction of the Matriculation Board, equivalent to those required for the matriculation examination of this University. Candidates offering certificates which are not a full equivalent will be required to pass the matriculation examination in such of the necessary subjects as are not covered thereby.

Intending students who wish to enter by certificates should under no circumstances come to the University without having first obtained from the Registrar a statement of the value of the certificates they hold, as many of these may lack one or more essential subjects, or the work done in a subject may not be adequate, or again, the percentage gained may not be sufficiently high. (See regulation 5.) Moreover, it must be remembered that a certificate may admit to one Faculty and not to another. When a diploma or certificate does not show the marks obtained in the several subjects of the examination, it must be accompanied by an official statement containing this information.

Province of Quebec.

The University School Leaving certificate.
The Model School diploma, under certain conditions.

Province of Ontario.

Certificates of admission to the Normal School and to the Faculty of Education.

Junior and Senior Matriculation certificates.

Province of New Brunswick.

First Class, Superior and Grammar School licences.
Grade XI and XII certificates.

Province of Nova Scotia.

The leaving certificates of Grades XI and XII.

Province of Prince Edward Island.

First Class Teachers' licences.

Second and Third Year certificates of Prince of Wales College.

Province of British Columbia.

Intermediate and Senior Grade certificates.

Province of Manitoba.

First and Second Class Teachers' certificates.

Provinces of Alberta and Saskatchewan.

The Departmental examination certificates for Standards VII and VIII.

Newfoundland.

Associate Grade certificates.

United States.

Certificates granted by the College Entrance Examination Boards, and by the New York State Board of Regents.

Great Britain.

The holder of a Higher Certificate or a School Certificate of the Oxford and Cambridge Schools Examination Board, or of a First Class Certificate of the College of Preceptors or of a Higher Examination Certificate of the Scotch and Welsh Education Departments is entitled to exemption from the matriculation examination, *pro tanto*, if the candidate has at one and the same examination passed in certain specified subjects.

Applications for exemption from the matriculation examination, based upon certificates of having passed examinations other than those above mentioned, will be considered as occasion may require by the Matriculation Board. Every such application must be accompanied by certificates and full particulars, and should be addressed to the Registrar.

II. MATRICULATION EXAMINATION FEES.

Junior Matriculation.

For the first examination* $5.00

(For examination at a local centre where not more than four candidates are writing the fee will be determined by the Registrar.)

For a subsequent examination in one or two subjects 2.00

For a subsequent examination in three or more subjects 3.00

For examination of certificates, in respect of which candidates are exempted from the whole of the matriculation examination 1.00

Senior Matriculation.

For the first examination $10.00

For a subsequent examination, per subject 2.00

Matriculation examination fees must be sent to the University Registrar at the time of application for the examination. No application will be accepted unless accompanied by the regular fee.

Certificates will be issued to successful candidates without additional fee.

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* In the case of candidates who qualify on certificates, or by other examinations in all but three subjects or less, the fee will be $3.00.

III. SUBJECTS OF EXAMINATION.

FACULTY OF ARTS.

Junior Matriculation.

(Admission to First Year.)

For candidates intending to take the B.A. course.

1. **English** (two papers).
2. **History*** (one paper).
3. **Latin** *or* **Greek** (two papers).
4. One of the following:
   Greek *or* **Latin** (the one not already chosen),
   French, German (two papers).
5. **Algebra, Part I** (one paper).
6. **Geometry, Part I** (one paper).
7. One of the following:
   Physiography, Botany, Chemistry, Physics (one paper), **a Language** not already chosen (two papers).

For candidates intending to take the B.Sc. course in Arts.

1. **English** (two papers).
2. **History*** (one paper).
3. **Algebra, Part I** (one paper).
4. **Geometry, Part I** (one paper).
5. **French** (two papers).
6. **Latin** *or* **German** (two papers) *or* **Physics** (one paper).
7. One of the following:
   Physiography, Botany, Chemistry, Physics—if not already chosen—(one paper), **Latin** (if not already chosen), **Greek** (two papers).

Candidates who intend ultimately to proceed to the study of Medicine are reminded that for medical registration it is necessary to take Latin.

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* See note under "History" on page 27.

For candidates entering on the course for the Diploma of Commerce.

One of the following examinations:—

(1) The ordinary matriculation examination for the B.A. or the B.Sc. Course.

(2) An examination on the following subjects:—

1. **English** (two papers).
2. History* (one paper).
3. **French,** including oral examination (two papers).
4. **Algebra, Part I** (one paper).
5. **Geometry, Part I** (one paper).
6. One of the following, viz:

Physiography, Botany, Chemistry, Physics (one paper).

Holders of Model School diplomas who are certified by the Head of the School for Teachers of Macdonald College to have taken 75 per cent. of the total marks at their final examinations, with not less than 50 per cent. of the marks in (1) mathematics, (2) French, and (3) Latin or Greek, respectively, will be admitted without further examination as undergraduates of the first year in Arts.

Senior Matriculation.

(Admission to Second Year.)

For candidates taking the B.A. course.

1. **Latin** *or* **Greek.**
2. **English.**
3. **History.**
4. **Latin** (if not already taken), *or* **Greek** (if not already taken), *or* **French** *or* **German.**
5. Mathematics (Algebra, Geometry and Trigonometry).
6. **Physics.**

The requirements in each subject are stated on pp. 38 to 40.

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* See note under "History" on page 27.

FACULTY OF APPLIED SCIENCE.

(For all courses leading to the Degree of B.Sc. in the different branches of Engineering.)

1. **English** (two papers).
2. **History*** (one paper).
3. One of the following:
   French, German, Latin, Greek (two papers).
4. **Algebra, Parts I and II** (two papers).
5. **Geometry, Parts I and II** (two papers).
6. **Trigonometry** (one paper).
7. One of the following:
   Physiography, Botany, Chemistry, Physics (one paper), a **Language** not already chosen (two papers).

(For the course leading to the Degree of B. Arch.)

1. **English** (two papers).
2. **History*** (one paper).
3. **French** (two papers).
4. One of the following:
   Greek, Latin, German (two papers), **Chemistry, Physics** (one paper).
5. **Algebra, Parts I and II** (two papers).
6. **Geometry, Parts I and II** (two papers).
7. **Trigonometry.**
8. **Freehand and Geometrical Drawing.**

In the case of No. 8, applicants may send specimens of their work to the Head of the Department or take an examination at the time of the regular matriculation examination in September. No examinations taken elsewhere are accepted as equivalents for this subject.

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* See note under "History" on page 27.

FACULTY OF MEDICINE.

1. **English** (two papers).
2. History* (one paper).
3. **Latin** (two papers).
4. **Algebra, Part I** (one paper).
5. **Geometry, Part I** (one paper).
6. **Chemistry** (one paper).
7. **Physics** (one paper).
8. One of the following:
   Greek, French, German (two papers).

In addition to the certificates mentioned on pages 18 and 19, the following are accepted in lieu of the matriculation examination for entrance in Medicine, provided they cover Latin:

The degree of Bachelor of Arts obtained from any recognized university.

A certificate of having passed the examination of a Provincial Medical Council.

In the case of candidates from the United States, a certificate of having passed a State or University examination fully equivalent to the matriculation examination required for entrance in this University.

No candidate will be admitted to the Faculty of Medicine without having satisfied all the matriculation examination requirements.

Those who intend to practice medicine in any of the Provinces of Canada will obtain information regarding registration and admission to study by corresponding with the Registrars of the several Provincial Medical Councils. (For names, see page 287.

See note under "History" on page 27.

FACULTY OF LAW.

1. **English** (two papers).
2. **History*** (one paper).
3. **Latin** (two papers).
4. **French** (two papers).
5. **Algebra, Part I** (one paper).
6. **Geometry, Part 1** (one paper).
7. One of the following:
   Physiography, Botany, Chemistry, Physics (one paper), **Greek, German** (two papers).

In addition to those who qualify on the certificates mentioned on pages 18 and 19, Bachelors of Arts, Science, or Letters of any Canadian or British University are admitted without examination.

No candidate domiciled in the Province of Quebec shall be admitted as an undergraduate in the Faculty of Law who shall not, in addition to other matriculation requirements, possess an adequate knowledge of French. Every candidate for admission as an undergraduate, whether exempt from the matriculation examination or not, shall be specially examined in this subject by an examiner appointed by Corporation, on the recommendation of the Matriculation Board, before being allowed to enter, and shall not be considered to possess an adequate knowledge unless he can speak the language with fair fluency and can translate with ease a passage of English into French.

Candidates who intend to practise law or to be admitted to the notarial profession in the Province of Quebec are referred to the statutory requirements as shown on page 282). If they are not graduates they should pass the examination for admission to study required by the Council of the Bar or by the Board of Notaries, as the case may be, before seeking to matriculate. In that case they will be matriculated without examination.

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* See note under "History" on page 27.

FACULTY OF AGRICULTURE.

(For the course leading to the Degree of B.S.A.)

1. **English** (two papers).
2. **History*** (one paper).
3. **Latin** *or* **French** *or* **German** (two papers).
4. **Algebra, Part I** (one paper).
5. **Geometry, Part I** (one paper).
6. Any two of the following:
   Botany, Chemistry, Physics, Zoology (one paper).

A matriculation certificate for entrance to any other Faculty of the University will also be accepted.

For the next two or three years, however, candidates for the degree will be allowed to proceed on satisfying the following conditions:—

(1) Pass before entrance in English grammar, history and geography, arithmetic and English composition.

(2) Obtain 60 per cent. of the marks in English and 50 per cent. in general proficiency in an examination on the work of the Two-Year Course, and be granted the permission of the Faculty to continue.

DEPARTMENT OF MUSIC.

(For the course leading to the Degree of Bachelor of Music.)

1. **English Grammar** (one paper).
2. **History*** and **Geography** (one paper).
3. **Arithmetic** (one paper).
4. **English** (two papers).
5. **French** *or* **German** *or* **Italian** (two papers).
6. **Rudiments of Music** (musical intervals, scales, clefs, time signatures, construction of chords, elementary harmony to chord of dominant seventh (one paper).

Optional:—Algebra, Part I and Geometry, Part I. A pass in either, or both, of these subjects will help to make up for deficiency in any others.

See note under "History" on page 27.

IV. REQUIREMENTS IN EACH SUBJECT.

For Junior Matriculation.

English Grammar.*

Main facts in connection with the history of the language; etymology and syntax. A good knowledge of parsing and analysis is essential. West's English Grammar for Beginners is recommended as a text-book.

One examination paper of two hours.

Arithmetic.*

All the ordinary rules, including square root, and a knowledge of the metric system.

One examination paper of two hours.

History and Geography.

Candidates will be required to show a somewhat intimate acquaintance with the history of England, from 1485 to the present time. While any text-book written for the upper forms of schools may be used in preparation for the examination, Gardiner's Outline of English History (Longmans) is recommended.

Certificates will not hereafter be accepted for History alone. Regulation 4, page 16, will be strictly followed.

The geography required will be that relating to the history prescribed.

One examination paper of two hours.

English.

Composition.—As in Sykes's Elementary Composition, with an essay on some subject connected with the works prescribed in literature. Frequent practice in composition is essential.

Literature.—For 1914. Any two of the following: Shakspere's Julius Cæsar; Nineteenth Century Prose (ed. Cunliffe), pp. 127 to the end, with notes (Copp, Clark Co.); Poems of the Romantic Revival (Copp, Clark Co.), pages 83

* For candidates intending to enter the Faculty of Agriculture or the Department of Music.

to the end, with notes; Tennyson's Select Poems, editor Alexander (Copp, Clark Co.).

Two examination papers of two hours each.

An alternative paper will be set on the work specified in English for the Junior matriculation examination of the Province of Ontario.

For 1915 and 1916.

For Critical Study.—Shakspere, Julius Cæsar; Nineteenth Century Prose, pp. 127 to the end, with notes (Copp, Clark Co.); Poems of the Romantic Revival, pp. 83 to the end, with notes (Copp, Clark Co.).

For Reading.—(a) Prose (two books to be selected). Washington Irving, The Sketch Book (ed. Litchfield, Ginn & Co.); Scott, Ivanhoe; George Eliot, Silas Marner (ed. Witham, Ginn & Co.); Addison and Steele, Sir Roger De Coverley Papers (ed. Litchfield, Ginn & Co.). (b) Poetry (one to be selected). Shakspere, As You Like It (Macmillan or Ginn); Tennyson, Gareth and Lynette (Macmillan or Ginn); Longfellow, The Courtship of Miles' Standish.

The editions under "Reading" are merely recommended, not required.

Spelling will be tested by candidates' papers in English composition and literature. Examiners in other subjects will also take note of mis-spelled words and will report flagrant cases to the Board.

Greek.

For 1914 and 1915.

Text.—Philpotts and Jerram, Easy selections from Xenophon, pp. 1-12.

Grammar.—Knowledge of grammar will be tested by translation and composition, and by grammatical questions based on the specified text.

Translation at Sight from Greek into English.

Composition.—Translation into Greek of detached English sentences and easy narrative based on the prescribed text.

Two papers of two hours each will be set; one on composition and translation at sight, the other on the prescribed text and grammar.

Alternative questions will be set on the work prescribed in Greek for the Junior matriculation examination of the Province of Ontario, if this differs from that specified above.

At the September examination other texts equivalent to those specified may be accepted, if application be made to the Registrar at least one month before the date of the examination.

Latin.

For 1914 and 1915.

Texts.—(A) Cæsar, De Bello Gallico, Books II and III; and (B) *Either* Ovid, Stories from the Metamorphoses (as in Gleason's "A Term of Ovid," American Book Company), lines 1 to 670, *or* Virgil, Aeneid II (Wainwright, Bell's Illustrated Classics).

Grammar.—Knowledge of grammar will be tested by translation and composition, and by grammatical questions based on the specified texts.

Translation at Sight from Latin into English.

Composition.—Translation into Latin of detached English sentences and easy narrative based on the prescribed texts.

Two papers of two hours each will be set; one on composition and translation at sight, the other on prescribed texts and grammar.

Note.—The "Roman" method of pronouncing Latin is recommended.

An alternative paper will be set on the Latin texts prescribed for the Junior matriculation examination of the Province of Ontario, if these differ from those specified above.

At the September examination other texts in Latin equivalent to those specified may be accepted, if application be

made to the Registrar at least a month before the day of the examination.

French.

Grammar.—A thorough knowledge of French accidence and of those points of syntax which are of more frequent occurrence in an ordinary easy style.

Translation at Sight into English of a French passage of moderate difficulty.

Translation at Sight into French of detached English sentences and an easy English passage. Material for such translation is selected with a view to testing the candidate's general knowledge of French grammar. Candidates are required to pass in English-French translation as well as in the paper as a whole.

Books recommended:—Fraser and Squair's French Grammar or Bertenshaw's French Grammar (Longmans), and Cameron's Elements of French Prose Composition (Holt & Co.).

A list of French texts suitable for class reading can be obtained by applying to the Registrar.

Two papers will be set, of two hours each, one on grammar, including translation of short English sentences into French and one on translation of continuous passages from French into English and from English into French.

For Special Regulation re Matriculation in Law, see page 25.

German.

Grammar.—A thorough knowledge of German accidence and syntax as in Van der Smissen, or any other German grammar of equally good standing.

Translation at Sight into English of a German passage of moderate difficulty.

Translation into German of detached English sentences and of an easy English passage. Material for such translation is selected with a view to exemplifying the points of grammar included within the above limits.

TEXTS.—(Translation and grammatical study):—

For 1914 and 1915.—Volkmann, Kleine Geschicten (Heath & Co.); Stille Wasser, ed. Bernhardt (Heath & Co.). It is recommended that candidates should read the prescribed texts in the above order, beginning in Volkmann's Kleine Geschicten with Himmelsschlüssel and Siebenmeilenstiefel.

The Ontario Junior matriculation requirements in German will be accepted in place of the texts specified above.

At the September examination other texts equivalent to those specified may be accepted, if application be made to the Registrar at least one month before the date of the examination.

Two papers will be set, of two hours each, one on grammar, including translation of short English sentences into German and one on translation of continuous passages from German into English and from English into German.

Algebra, Part I.

Elementary rules, involution, evolution, fractions, indices, surds, simple and quadratic equations of one or more unknown quantities; as in Hall and Knight's Elementary Algebra to the end of surds (omitting portions marked with an asterisk), or as in similar text-books.

One examination paper of two hours.

Algebra, Part II.

The three progressions, ratio, proportion, variation, permutations and combinations, binomial theorem, logarithms, theory of quadratic equations, as in the remainder of Hall and Knight's Elementary Algebra (omitting Chaps. 40 to 44 inclusive), or as in similar text-books.

One examination paper of an hour and three-quarters.

Geometry, Part I.

The paper shall contain questions on practical and on theoretical geometry. Every candidate shall be expected to answer questions in both branches of the subject.

The questions on practical geometry shall be set on the constructions contained in the annexed Schedule A, together with easy extensions of them. In cases where the validity of a construction is not obvious, the reasoning by which it is justified may be required. Every candidate shall provide himself with a ruler graduated in inches and tenths of an inch, and in centimetres and millimetres, a set square, a protractor, compasses and a hard pencil. All figures should be drawn accurately. Questions may be set in which the use of the set square or of the protractor is forbidden.

The questions on theoretical geometry shall consist of theorems contained in the annexed Schedule B, together with questions upon these theorems, easy deductions from them, and arithmetical illustrations. Any proof of a proposition shall be accepted which appears to the examiners to form part of a systematic treatment of the subject; the order in which the theorems are stated in Schedule B is not imposed as the sequence of their treatment.

In the proof of theorems and deductions from them, the use of hypothetical constructions shall be permitted. Proofs which are only applicable to commensurable magnitudes shall be accepted.

Schedule A.

Bisection of angles and of straight lines.

Construction of perpendiculars to straight lines.

Construction of an angle equal to a given angle.

Construction of parallels to a given straight line.

Simple cases of the construction from sufficient data of triangles and quadrilaterals.

Division of straight lines into a given number of equal parts or into parts in any given proportions.

Construction of a triangle equal in area to a given polygon.

Construction of tangents to a circle and of common tangents to two circles.

Simple cases of the construction of circles from sufficient data.

Construction of a fourth proportional to three given straight lines and a mean proportional to two given straight lines.

Construction of regular figures of 3, 4, 6 or 8 sides in or about a given circle.

Construction of a square equal in area to a given polygon.

Schedule B.

If a straight line stands on another straight line, the sum of the two angles so formed is equal to two right angles; and the converse.

If two straight lines intersect, the vertically opposite angles are equal.

When a straight line cuts two other straight lines, if (i) a pair of alternate angles are equal or (ii) a pair of corresponding angles are equal, or (iii) a pair of interior angles on the same side of the cutting line are together equal to two right angles, then the two straight lines are parallel; and the converse.

Straight lines which are parallel to the same straight line are parallel to one another.

The sum of the angles of a triangle is equal to two right angles.

If the sides of a convex polygon are produced in order, the sum of the angles so formed is equal to four right angles.

If two triangles have two sides of the one equal to two sides of the other, each to each, and also the angles contained by those sides equal, the triangles are congruent.

If two triangles have two angles of the one equal to two angles of the other, each to each, and also one side of the one equal to the corresponding side of the other, the triangles are congruent.

If two sides of a triangle are equal, the angles opposite to these sides are equal; and the converse.

If two triangles have the three sides of the one equal to the three sides of the other, each to each, the triangles are congruent.

If two right-angled triangles have their hypotenuses equal, and one side of the one equal to one side of the other, the triangles are congruent.

If two sides of a triangle are unequal, the greater side has the greater angle opposite to it; and the converse.

Of all the straight lines that can be drawn to a given straight line from a given point outside it, the perpendicular is the shortest.

The opposite sides and angles of a parallelogram are equal, each diagonal bisects the parallelogram, and the diagonals bisect one another.

If there are three or more parallel straight lines, and the intercepts made by them on any straight line that cuts them are equal, then the corresponding intercepts on any other straight line that cuts them are also equal.

Parallelograms on the same or equal bases and of the same altitude are equal in area.

Triangles on the same or equal basis and of the same altitude are equal in area.

Equal triangles on the same or equal bases are of the same altitude.

Illustrations and explanations of the geometrical theorems corresponding to the following algebraical identities:

$$\begin{aligned} k\,(a + b + c \ldots) &= ka + kb + kc + \ldots \\ (a + b)^2 &= a^2 + 2ab + b^2 \quad \ldots \\ (a - b)^2 &= a^2 - 2ab + b^2 \quad \ldots \\ (a^2 - b^2) &= (a + b)\,(a - b). \end{aligned}$$

The square on a side of a triangle is greater than, equal to, or less than the sum of the squares on the other two sides, according as the angle contained by those sides is obtuse, right, or acute. The difference in the cases of inequality is twice the rectangle contained by one of the two sides and the projection on it of the other.

The locus of a point which is equidistant from two fixed points is the perpendicuar bisector of the straight line joining the two fixed points.

The locus of a point which is equidistant from two intersecting straight lines consists of the pair of straight lines which bisect the angles between the two given lines.

A straight line, drawn from the centre of a circle to bisect a chord which is not a diameter, is at right angles to the chord; conversely, the perpendicular to a chord from the centre bisects the chord.

There is one circle, and one only, which passes through three given points not in a straight line.

In equal circles (or, in the same circle) (i) if two arcs subtend equal angles at the centres, they are equal; (ii) conversely, if two arcs are equal, they subtend equal angles at the centres.

In equal circles (or in the same circle) (i) if two chords are equal, they cut off equal arcs; (ii) conversely, if two arcs are equal, the chords of the arcs are equal.

Equal chords of a circle are equidistant from the centre; and the converse.

The tangent at any point of a circle and the radius through the point are perpendicular to one another.

If two circles touch, the point of contact lies on the straight line through the centres.

The angle which an arc of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference.

Angles in the same segment of a circle are equal; and, if the line joining two points subtends equal angles at two other points on the same side of it, the four points lie on a circle.

The angle in a semicircle is a right angle; the angle in a segment greater than a semicircle is less than a right angle; and the angle in a segment less than a semicircle is greater than a right angle.

The opposite angles of any quadrilateral inscribed in a circle are supplementary; and the converse.

If a straight line touch a circle, and from the point of contact a chord be drawn, the angles which this chord makes with the tangent are equal to the angles in the alternate segments.

If two chords of a circle intersect either inside or outside the circle the rectangle contained by the parts of the one is equal to the rectangle contained by the parts of the other.

If a straight line is drawn parallel to one side of a triangle, the other two sides are divided proportionally; and the converse.

If two triangles are equiangular their corresponding sides are proportional; and the converse.

If two triangles have one angle of the one equal to one angle of the other and the sides about these equal angles proportional, the triangles are similar.

The internal bisector of an angle of a triangle divides the opposite side internally in the ratio of the sides containing the angle, and likewise the external bisector externally.

The ratio of the areas of similar triangles is equal to the ratio of the squares on corresponding sides.

Text-Book recommended:—Godfrey and Siddons' Elementary Geometry (Pitt Press, Cambridge), or Hall and Stevens' School Geometry.

An alternative paper will be set on the Ontario Junior Matriculation requirements in this subject.

One examination paper of two hours and a half.

Geometry, Part II.

Constructions.

To draw the inscribed, escribed, and circumscribing circles of a triangle.

To construct triangles under given conditions.

To divide a given line externally and internally in medial section.

To construct an isosceles triangle, such that each of the base angles is twice the vertical angle.

To describe a regular pentagon.

To construct a polygon similar to a given polygon, and such that their areas are in a given ratio.

To construct a figure equal in area to a given figure A, and similar to another figure B.

Theorems.

If two sides of one triangle be equal respectively to two sides of another, that with the greater contained angle has the greater base; and conversely.

If a triangle is such that the square on one side is equal to the sum of the squares on the other two sides, the angle contained by these sides is a right angle.

The three medians of a triangle are concurrent.

Perpendiculars from the angles to the opposite sides of a triangle are concurrent.

The complements of parallelograms about the diagonal of any parallelogram are equal.

If the circumference of a circle be divided into n equal arcs:—

(1) The points of division are the vertices of a regular polygon of n sides inscribed in the circle.

(2) If tangents be drawn to the circle at these points, these tangents are the sides of a regular polygon of n sides circumscribed about the circle.

If $OA : OB = OC^2$, OC is a tangent to the circle through A B C.

If two triangles have an angle in each equal, and the sides about two other angles proportional, the remaining angles are equal or supplemental.

The perpendicular from the right angle of a right-angled triangle on the hypotenuse divides the triangle into two triangles which are similar to the original triangle.

The sum of the rectangles contained by the opposite sides of a quadrilateral, about which a circle can be described, is equal to the rectangle contained by its diagonals.

The squares on two sides of a triangle are together equal to twice the square on half the third side and twice the square on the median to that side.

If from the vertical angle of a triangle a straight line be drawn perpendicular to the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the perpendicular and the diameter of the circle described about the triangle.

If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the segments of the base, together with the square on the straight line which bisects the angle.

The areas of two similar polygons are as the squares on corresponding sides.

In a right angled triangle the rectilineal figure described on the hypotenuse is equal to the sum of the similar and similarly described figures on the other two sides.

If three lines be proportional, the first is to the third as the figure on the first is to a similar figure on the second.

If the straight lines joining a point to the vertices of a given polygon are divided (all externally or all internally) in the same ratio, the points of division are the vertices of a similar polygon.

Two similar polygons may be so placed that the lines adjoining corresponding points are concurrent.

Triangles of equal altitude are as their bases.

In equal circles, angles, whether at the centres or circumferences, are proportional to the arcs on which they stand.

If P is any point on the circumscribing circle of a triangle, ABC, and PL, PM, PN are perpendicular to BC, CA, AB, respectively, LNM is a straight line.

A point P moves so that the ratio of its distances from two fixed points, Q and R, is constant; prove that the locus of P is a circle.

Areas.

Area of a circle.
Area of a sector of a circle.
Area of a segment of a circle.

Use of Squared Paper.

Marking points.
Finding areas of rectilinear and curvilinear figures.
Examples of plotting loci; in particular, the ellipse, hyperbola, and parabola.
Examples of loci and envelopes.

Deductions and Applications.

Deductions from, and simple applications of the constructions and theorems given above.

Text-book:—Godfrey and Siddons' Elementary Geometry (Pitt Press, Cambridge), or Hall and Stevens' School Geometry.

One examination paper of two hours.

An alternative paper will be set on the work prescribed for Senior matriculation in Geometry in the Province of Ontario.

Trigonometry.

Measurement of angles, trigonometrical ratios or functions of one angle, of two angles, and of a multiple angle; as in

Lock's Elementary Trigonometry, Chaps. I. to XII., Hall and Knight's Trigonometry, Chaps I. to XII., inclusive, omitting Chap. V.; or as in similar text-books.

One examination paper of an hour and a half.

Physical Geography.

The elements of the science, as in Davis's Elementary Physical Geography, or any other text-book covering the same ground.

One examination paper of an hour and a half.

Botany.

Text-book to be studied:—Derick, A Text-book of Botany (Educational Book Co., Toronto).

One examination paper of an hour and a half.

Chemistry.

Elementary inorganic chemistry, comprising the preparation and properties of the chief non-metallic elements and their more important compounds, the laws of chemical action, combining weight, etc. The ground is simply and effectively covered by Remsen's "Elements of Chemistry," pp. 1 to 165 and 218 to 243. (Macmillan's Edition.)

One examination paper of an hour and a half.

Physics.

Properties of matter; elementary mechanics of solids and fluids, including the laws of motion, simple machines, work, energy; fluid pressure and specific gravity; thermometry, the effects and modes of transmission of heat.

Text-books recommended:—Gage's Introduction to Physical Science, 1902 edition (Ginn & Co.), Chaps. I. to IV., inclusive; or "Physics," by Mann & Twiss, Revised Edition (Educational Book Co., Toronto).

One examination paper of an hour and a half.

September Examination.

The September matriculation examination in 1913 will commence on Monday, the 22nd.

Special arrangements may be made for the examination of candidates who are prevented by severe illness or domestic affliction from presenting themselves on the dates fixed.

FOR SENIOR MATRICULATION.

English.

Composition.—The examination will be designed mainly to test the candidate's ability to write English. He will be expected to have acquired a fairly clear and accurate style, to be able to arrange material in an effective fashion, and to show discrimination in the choice of words. In preparation for the examination, it is suggested that students be required to write mainly on simple, expository subjects that are within the range of their actual experience.

Carpenter's Rhetoric and English Composition (Macmillan) is recommended as a suitable text-book.

Literature.—The examination will be based on the following texts:—Chaucer's Prologue to the Canterbury Tales; Spenser's Faerie Queene, Book I, Cantos 1 and 2; Shakspere's Macbeth and As You Like It; Milton's Minor Poems (L'Allegro, Il Penseroso, Lycidas and Comus); and Bunyan's Pilgrim's Progress, Part I.

Candidates will also be expected to read Long's English Literature (Ginn & Co.), Chapters I-VII inclusive, with especial emphasis on the portions most closely connected with the foregoing list of books.

History.

Introduction to European History.—The course starts with the ancient world at about 1000 B.C., and covers the period of European civilization to the beginning of the Mediæval period. Stress will be laid upon the historical geography of this period and candidates should provide themselves with Putzger's Historischer Schul-Atlas.

The examination will be based on the following texts:—Sanderson, Ancient Oriental Monarchies; Cox, Greeks and Persians; Curteis, Rise of the Macedonian Empire; Botsford, History of Rome; Adams, Civilization in the Middle Ages, Chapters I-V; Plutarch's Lives (The Lives of Themistocles, Pericles, Pyrrhus, Caius Gracchus, Cato the Younger, and Julius Cæsar; Clough's translation).

Latin.

AUTHORS:—Virgil, Georgic I (Page, Macmillan); Winbolt and Merk's Roman Life Reader (Constable), pp. 20-63.

Prose and Unseen:—A higher standard will be required than for ordinary matriculation. Books suggested, Mitchell's Latin Composition (Macmillan's Canadian School Series); Rivington's Class Books of Latin Unseens, Book IV (Rivingtons, London).

Roman History:—Outlines to 133 B.C. Book recommended, Botsford, History of Rome (Macmillan), chs. I to VI.

Grammar.—New Latin Grammar by Sonnenschein (Clarendon Press, 1912. N.B. Note the exact title), pp. 178-211.

Greek.

Abbott & Arnold's Greek Prose Composition to Exercise 36.

Allen's Elementary Greek Grammar to page 101.

Peacock & Bell's Passages for Greek Translation to end of page 15.

French.

Vreeland & Koren, French Syntax and Composition (Holt); Super, Histoire de France (Holt); Maupassant, Huit Contes Choisis (Heath); Lemaitre, Contes extraits de Myrrha (Heath); Labiche, La Grammaire (Heath); Daudet, Selected Stories (A. B. Co.); Milhau, Choix de Poésies (Le meunier, son fils et l'âme, Oceano Nox, La mort du loup, La nuit de mai, Les yeux); Dumas, Napoléon, including the passages for translation into French (Macmillan).

German.

Van der Smissen und Fraser, High School German Grammar (Copp, Clark Co.); Moscher, Wilkommen in Deutschland (Heath); Baker's German Stories (Holt); Freytag, Die Journalisten (Ginn); Collmann, Easy German Poetry (Ginn); Notes on the History of Germany; Horning, German Composition.

Mathematics.

Plane and Solid Geometry.—The equivalent of Books IV, VI and XI of Euclid, with supplementary matter from Hall and Stevens' Euclid.

Algebra.—Hall and Knight's Elementary Algebra (omitting chapters 40-42 inclusive), or the same subject matter in similar text-books.

Trigonometry.—Hall and Knight's Elementary Trigonometry to page 210 and chapter 19; nature and use of logarithms (Bottomley's four-figure tables).

Physics.

A general knowledge of the more important principles of elementary physics will be required.

Text-book:—College Physics, by Reed and Guthe (Macmillan), omitting articles with asterisks and the following chapters:—6, 8, 10, 23, 27, 39, 46, 47, 48, 56, 57, 58, 59, 60, 62, 64.

V. ADMISSION TO ADVANCED STANDING.

A student of another university applying for exemption from any subject or subjects which he has already studied is required to submit with his application a Calendar of the University in which he had previously studied, together with a complete statement of the course he has followed and a certificate of the standing gained therein.

The Faculty, if otherwise satisfied, will decide what examination, if any, or what other conditions may be necessary before admitting the candidate.

Undergraduates in Arts of the second and third years, or graduates in Arts of any university, entering the Faculty of Applied Science, may, at the discretion of the Faculty, be exempted from such lectures as they have previously attended as students in Arts.

VI. PHYSICAL EXAMINATION.

In order to promote as far as possible the physical welfare of the student body, every student, on entering the University, will be required to pass a physical examination to be conducted by, or under the direction of, the Medical Director of Physical Education or by a recognized representative.

By such an examination physical defects and weaknesses, amenable to treatment, may be discovered. The student would then be expected to apply to his physician for such remedial measures as his case may require. Those who are examined will also be advised as to the forms of exercise or athletic activities which would likely be beneficial or injurious.

Students who do not present themselves for this examination (or otherwise satisfy the Medical Director), before November 1st, will not be allowed to attend the University.

VII. AGE OF ADMISSION.

Except under special circumstances no student under the age of sixteen is admitted to the first year courses in Arts, Applied Science or Medicine, or under the age of seventeen to the second year, and no student under the age of seventeen is admitted to the course in Law.

All students are required to attend lectures at the University, in Montreal or at Macdonald College, as the case may be.

VIII. OPENING AND CLOSING DATES OF SESSION 1913-1914.

The Session 1913-1914 will open in all Faculties on Wednesday, October 1st, 1913, on the afternoon of which day (at 4 p.m.) the Principal will deliver the usual inaugural address in the Assembly Hall of the Royal Victoria College. It will end in the Faculties of Arts, Law and Applied Science on Tuesday, May 12th, 1914.

For information regarding registration, see page 43.

CLASSES OF STUDENTS.

There are four classes of students in the University:—

(1) Graduates—students who have previously obtained an ordinary degree at McGill, or elsewhere, and who are now pursuing courses for the Master's degree (in Arts or Applied Science), or for the degree of Ph.D.

(2) Undergraduates—students who have passed the matriculation examination and, in the case of second, third and fourth year students, all the examinations of their course in the years below that in which they are registered.

(3) Conditioned undergraduates—those with defective entrance qualifications or who have failed in one or more of the subjects of their course in the year previous to that in which they are registered.

(4) Partial students—comprising all those who, not belonging to one of the above classes, are taking a partial course of study in the University. Except as provided below, such students may (subject to the approval of the Head of the Department and the Dean or the Committee appointed for this purpose) attend any class without previous examination.

In order to obtain admission to the first year classes in French, intending students must have passed the University matriculation examination, or an equivalent examination, in that subject.

REGISTRATION AND ATTENDANCE.

1. Registration.

BETWEEN THE 24TH AND THE 28TH SEPTEMBER, BOTH DATES INCLUSIVE, STUDENTS IN ARTS, LAW AND MEDICINE MAY REGISTER FOR THE SESSION 1913-1914, AT THE OFFICE OF THE UNIVERSITY REGISTRAR. APPLIED SCIENCE STUDENTS WHO HAD BEEN IN ATTENDANCE BEFORE WILL NOT REGISTER TILL OCTOBER 1ST. TUESDAY, SEPTEMBER 30TH, WILL BE SPECIAL REGISTRATION DAY FOR NEW STUDENTS, WHEN THEY WILL REGISTER IN THE WILLIAM MOLSON HALL. ON WEDNESDAY, OCTOBER 1ST, THOSE WHO HAD BEEN ENROLLED IN ANY PREVIOUS SESSION WILL REGISTER AS FOLLOWS, IF THEY HAVE NOT ALREADY DONE SO:—ARTS STUDENTS (MEN) IN THE WILLIAM MOLSON HALL, (WOMEN) IN THE ROYAL VICTORIA COLLEGE; APPLIED SCIENCE STUDENTS IN THE ENGINEERING BUILDING AND MEDICAL STUDENTS IN THE REGISTRAR'S OFFICE. LECTURES WILL COMMENCE ON THURSDAY, OCTOBER 2ND. THE COMPLETE REGULATIONS REGARDING REGISTRATION ARE AS UNDER.

1. Candidates entering on a course of study in any Faculty, whether as undergraduates, conditioned students or partial students, are required to attend at the office of the University Registrar, or such other place as he may designate, some time during the week preceding the opening day of the session, in order to furnish the information necessary for the University records, to register for the particular classes which they wish to attend, and to sign the following declaration in the matricula or register:—

"I hereby accept and submit myself to the statutes, rules, regulations and ordinances of McGill University, and of the Faculty or Faculties in which I am registered, and to any

amendments thereto which may be made while I am a student of the University, and I promise to observe the same."

2. On the day immediately before the opening day of the session students who had been previously enrolled shall register for particular subjects as follows:—Arts students in the Molson Hall; Applied Science students in the Engineering Building; and Medical students at the office of the University Registrar. With the exception of students in Applied Science, they may also register during the five preceding days at the Registrar's Office.

3. Students who for any reason have failed to register at the times specified above will be permitted to do so at the Registrar's Office within a limited time thereafter. In the Faculty of Applied Science, those who do not register on the regular registration day, Wednesday, October, 1st, will be allowed to do so thereafter only when they have paid a fee of $5.00 to the Bursar for late registration.

4. The Registrar is empowered to register all students whose records show that they are entitled to attend the classes applied for. All doubtful cases shall be dealt with by committees as follows:—in the case of candidates registering for the first time, by a committee of the Matriculation Board; in the case of all others, by a special committee of the Faculty concerned.

5. The names of those who have registered for separate classes shall be sent by the Registrar to the Heads of Departments on registration day and subsequently, as new names are received, and only those for whom cards have been received by an instructor shall be admitted to his class; except in the case of students whose standing cannot be determined at the time of registration. To these, special tickets will be issued, which will give them the right of admission to classes until such time as their status is ascertained.

6. Students desiring to make a change in their choice of studies must make application to the Registrar to do so on

a regular form. This application must be approved by the Dean of the Faculty in which he is enrolled, whereupon due notice will be sent by the Registrar to all parties concerned. No change in registration will be allowed, except under special circumstances, after the fifteenth day of the session.

7. Persons who wish to pursue courses in the University without a view to qualifying for a degree shall be classified as partial students and shall not be admitted to any course until they have obtained the permission of the Head of the department concerned. Their application must then be approved by the Dean of the Faculty or the committee appointed for this purpose.

8. In the Faculty of Arts, where there is a choice of courses, students in attendance shall be required to choose their electives for the next year before the close of the preceding session, or (in cases where this cannot be done), not later than one week before the opening of the session.

2. Attendance.

1. Students are required to attend at least seven-eighths of the total number of lectures in any one course. Those whose absences exceed one-eighth of the total number of lectures in a course shall not be permitted to come up for the examination in that course.

Excuses on the ground of illness or domestic affliction shall be dealt with only by the Deans of the respective Faculties.

2. A record shall be kept by each professor or lecturer, in which the presence or absence of students shall be carefully noted. This record shall be submitted to the Faculty when required.*

3. Credit for attendance on any lecture or class may be refused on the grounds of lateness, inattention, neglect of study, or disorderly conduct in the class room or laboratory. In the case last mentioned, the student may, at the discretion

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* Physical education for women is included under this regulation.

of the Professor, be required to leave the room. Persistence in any of the above offences against discipline shall, after admonition by the Professor, be reported to the Dean of the Faculty concerned. The Dean may, at his discretion, reprimand the student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from classes.

4. The following special regulation with regard to marking the attendance of students has been adopted by the Faculties of Arts and Applied Science:—

Lectures will commence at five minutes after the hour, on the conclusion of the roll-call. After the commencement of a lecture students are not allowed to enter, except with the permission of the Professor. If permitted to enter, they will, on reporting themselves at the close of the lecture, be marked "late." Two lates will count as one absence. Lectures end at five minutes before the hour.

STUDENTS' EXPENSES.

1. Board and Residence.

No college residences have as yet been erected for men students, but dormitory accommodation for about 60 is provided in Strathcona Hall, the new home of the McGill Y.M.C.A. Full particulars concerning terms of residence, etc., may be obtained from the Secretary of the Association, 348 Sherbrooke St. West, Montreal, who will also make arrangements to have students who are strangers to the City met on arrival and helped to secure lodgings, if due notice is sent of the station and time at which they will arrive.

A list of suitable boarding and lodgings houses in the city is prepared about a fortnight before the opening of the session each year, and may be obtained on application to the Secretary of the McGill Y.M.C.A., Strathcona Hall.

Women students may board and reside either in private houses or in the Royal Victoria College, which provides, in addition to separate lecture rooms, residential accommodation for the women students of the University. The expense of board and residence for the session in the Royal Victoria College is $290. Students who remain for the summer classes pay a fee of $50, which includes board, residence and instruction. Further particulars will be furnished by the Warden.

Good board and lodging can be obtained in private houses in the vicinity of the University buildings at a cost of from $28 and upwards per month; or, separately, board at $18 to $25 per month, rooms from $9 to $15 per month.

Excellent board is furnished in the McGill Union at low rates. The dining room, which is a special feature of the Union, will accommodate over 120 students at a time. There is also a lunch counter where meals are served *à la carte*. A description of the building will be found on page 375.

2. Approximate Estimate of Cost of Course.

Faculty of Arts (men)*.

	Minimum	Moderate
Tuition Fees	$ 58	$ 58
Fee for Athletics, Union, etc.	10	10
Board and Lodging	190	220
Books and Apparatus	10	15
	$268	$303

Faculty of Applied Science.

	Minimum	Moderate
Tuition Fees	$197†	$197†
Fee for Athletics, Union, etc.	10	10
Board and Lodging	190	220
Books and Instruments	20	30
	$417	$457

Students whose course in any year requires them to attend the University for an additional period of one month will have to spend from $28 to $40 extra in that particular year.

Faculty of Medicine.

	Minimum	Moderate
Tuition Fees	$147	$147
Fee for Athletics, Union, etc.	10	10
Board and Lodging	220	250
Books, Instruments, etc. ...	35	45
	$412	$452

* For estimate of expenses for women students, see page 362 and the Announcement of the Royal Victoria College.

† In the case of students in Architecture, this fee is only $147.00.

Undergraduates in Arts residing in affiliated theological colleges, with a view to a course in theology, are able to obtain board and lodging for less than the minimum shown above, and in all Faculties the expense under the head of "Books and Instruments" can be reduced by purchasing them at second-hand. It should be understood that the cost of these articles is less in the first two years than it is in the third and fourth. The average cost for the whole course is the estimate given. It will be noticed that in this estimate no account is taken of personal expenses, such as cost of clothes, laundry, etc. It might be well also to reckon on at least $15 for subscriptions of various kinds.

EXHIBITIONS, SCHOLARSHIPS AND PRIZES.

I. SCHOLARSHIPS, EXHIBITIONS AND PRIZES—GENERAL.

1. THE RHODES SCHOLARSHIP.—This scholarship is of the annual value of £300 sterling and is tenable at the University of Oxford for three years. The scholar must be a British subject, must be over 19 and under 25 years of age, and must have reached at least the end of his sophomore or second year in the University.

Rhodes Scholarships have been awarded as follows:—1904, Herbert J. Rose, B.A., and John G. Archibald, B.A.; 1905, Talbot M. Papineau, B.A.; 1906, Alexander R. McLeod, B.A.; 1908, Frank E. Hawkins, B.A.; 1911, Walter J. Pearse; 1913, W.E. Gladstone Murray, B.A.

The next election of a Rhodes Scholar by McGill University will be in 1915.

2. SCIENCE SCHOLARSHIPS GRANTED BY HER MAJESTY'S COMMISSIONERS FOR THE EXHIBITION OF 1851.—These scholarships, of the value of £150 sterling a year, are tenable for two, or, in rare instances, three years. They are limited, according to the Report of the Commission, "to those branches of science such as physics, mechanics and chemistry, the extension of which is specially important for our national industries." Their object is not to facilitate ordinary collegiate studies, but "to enable students to continue the prosecution of science with the view of aiding in its advance or in its application to the industries of the country."

It is open to students of not less than three years' standing who have shown evidence of capacity for original research, and is tenable at any university or any other institution approved by the Commission.

A nomination to one of these Scholarships may be granted to McGill University in 1915, in which event applications should be sent to the Registrar on or before March 1st.

This Scholarship has been awarded as follows:—
Evans, P. N., 1891; Macphail, J. A., 1893; King, R. O., 1895; Gill, J. L. W., 1897; McLean, W. B., 1899; McClung, R. K., 1901; Cooke, H. Lester, 1903; Johnson, F. M. G., 1905; Simpson, J. C., 1907; Boyle, R. W., 1909; Shaw, A. Norman, 1911; Meldrum, W. Buell, 1912; Maass, Otto, 1913.

3. THE DR. T. STERRY HUNT RESEARCH SCHOLARSHIP IN CHEMISTRY.—It is proposed to offer this scholarship each year to graduate students in the Faculties of Arts and Applied Science.

4. THE P. S. ROSS EXHIBITION of $100.00, founded by Mr. P. D. Ross, B.A.Sc., in memory of his late father, Mr. P. S. Ross, and given through the Ottawa Valley Graduates' Society, will be awarded annually to the candidate from the Ottawa Valley for entrance to any Faculty, who obtains the highest percentage at the June matriculation examination.

5. THE CHESTER MACNAGHTEN PRIZE of the value of $25.00 in books, established by Russell E. Macnaghten, Esq., M.A., in memory of his late uncle, will be awarded annually, through the University Literary and Debating Society, for reading in English.

II. SCHOLARSHIPS AND EXHIBITIONS IN ARTS.

GENERAL REGULATIONS.

1. No student can hold more than one exhibition or scholarship at the same time.

2. Exhibitions and scholarships will not necessarily be awarded to the candidates who have obtained the highest marks. An adequate standard of merit will be required.

3. If in any college year there be not a sufficient number of candidates showing adequate merit, any one or more of the exhibitions or scholarships offered for competition may be given to more deserving candidates in another year.

4. A successful candidate must, in order to retain his scholarship or exhibition, proceed regularly with his college course to the satisfaction of the Faculty.

5. The annual income of the scholarships or exhibitions will be paid in four instalments, viz.:—In October, December, February and April, about the 20th of each month.

EXHIBITIONS AVAILABLE IN ARTS.

The Jane Redpath Exhibition, founded by the late Mrs. Redpath of Terrace Bank, Montreal:—value, about $90, open to both men and women.

Ten Macdonald Scholarships and Exhibitions, founded by Sir W. C. Macdonald, Montreal: value $125 each.

The Charles Alexander Scholarship (for men students), founded by the late Charles Alexander, Esq., Montreal, for the encouragement of the study of Classics and other subjects:—value $90.

The Major H. Mills Scholarship, founded by bequest of the late Major Hiram Mills:—value $100.

The Barbara Scott Scholarship, founded by the late Miss Barbara Scott, Montreal, for the encouragement of the study of the Classical languages and literature:—value $100 to $120.

Four Mackenzie Exhibitions for Economics and Political Science, founded in memory of the late Hon. Alexander Mackenzie:—value, $50 to $100. (For particulars see page 60.)

One of The Rev. Samuel Massey Exhibitions, founded by Mr. George Massey, in memory of his late father, Rev. Samuel Massey:—value $62.50.

The Sir William Dawson Exhibition, given by the New York Graduates' Society:—value, $60.00.

FIRST YEAR EXHIBITIONS IN ARTS.

I. EXHIBITION FOR HOLDERS OF MODEL DIPLOMA.

An exhibition of $150 is offered annually in the Faculty of Arts to holders of Model diplomas obtained after a course of study in Macdonald College, under the following conditions:—

(1) Candidates must apply through the Head of the School for Teachers before May 1st.

(2) They must satisfy the entrance requirements of the Faculty of Arts and declare their intention to proceed to a First Class Academy diploma following the course prescribed by the University.

The exhibition will be awarded on the academic subjects of the examination for the Model diploma; but although the practice marks will not be taken into account directly, the opinion of the Macdonald College staff as to the general fitness of the applicant for a University course will be considered In case there is no applicant from the graduating class in any year, applications from graduates of previous years will be considered on their merits.

Holders of this exhibition will be permitted to count practice teaching and post-graduate work towards the fulfilment of their agreement to teach for a period of three years in the Province of Quebec.

II. EXHIBITION GRANTED BY THE GRADUATES' SOCIETY OF THE DISTRICT OF BEDFORD.

This exhibition, of the value of $100, will be awarded annually to a "matriculated student in Arts whose parents reside in the District of Bedford, and whose candidature has been approved by a committee of the Society."

III. UNIVERSITY ENTRANCE EXHIBITIONS.*

The following exhibitions may be offered for competition in June, 1914, to candidates for admission to the first year:—

(1) *Matriculation Examination Exhibitions.*

Five exhibitions, of the value of $150.00 each (three open only to candidates not residing on the Island of Montreal), three of the value of $100.00 each and two of the value of $75.00 each (one of each value open only to candidates not residing on Montreal Island), will be awarded on the result of the matriculation examination in June. In addition, two exhibitions open to women only and conditional on residence in the Royal Victoria College, are offered each year, one of the value of $200, and one of $100.

* Some modification of the conditions on which Entrance Exhibitions are offered is at present under consideration, mainly in the direction of giving a further preference to candidates who may present themselves from outside the district of Montreal. The same applies also to the offer of Second Year Exhibitions and Third Year Scholarships.

(2) *Certificate Exhibitions.*

Five exhibitions, of the value of $150.00 each, are offered for competition to candidates who qualify on certificates granted by Provincial Departments of Education, provided these certificates show that the candidates have obtained at least 75% of the total marks obtainable in the subjects required for entrance with a minimum of 50% in each Applications for these exhibitions may be made at any time up to the first of September preceding the opening of the session, and the award will be made shortly thereafter to the five applicants who stand highest.

(3) *Advanced Exhibitions.*

Two exhibitions of the value of $200 each will be awarded on the result of an examination held at the close of the matriculation examination in June each year, on any three of the following subjects:—English, Latin, Greek, French, German, Mathematics; provided, however, that no award will be made to a candidate who has not obtained first class standing at the University matriculation examination, or at an examination which is accepted as the equivalent.

Requirements in each Subject.

The details of the work required in Advanced Exhibition subjects (any three of which may be chosen, as stated above) are as follows:

English.

LANGUAGE, 1914 and 1915.—The Making of English, by Henry Bradley (Macmillan).

LITERATURE, 1914 and 1915.—Poems of the Romantic Revival (Copp, Clark Co.) pp. 1 to 82, with Introduction and Notes; Macaulay, Essays on Byron, Warren Hastings, Clive.

COMPOSITION.—The candidate will be required to write an essay on some subject connected with the examination.

Latin.

Grammar; translation at sight; prose composition.

Translation from and questions on the following texts:

1914 and 1915—Virgil, Aeneid, Book III; Cicero, in Catilinam I and II.

Greek.

Grammar; translation at sight; prose composition.

Translation from and questions on the following texts:

1914 and 1915.—Homer, Iliad VI; Lucian, Charon.

French.

(*a*) Grammar, including syntax; (*b*) translation at sight from French into English; (*c*) translation at sight of easy English prose passages into French; (*d*) translation from the following texts:—

1914 and 1915.—Moliére, Le Bourgeois Gentilhomme (Heath); DeVigny, La Canne de Jonc (Heath & Co.); Sand, La Mare au Diable (Ginn & Co.).

German.

(*a*) Grammar.—accidence and syntax; (*b*) translation at sight from German into English; (*c*) translation at sight into German of an easy passage of English prose; (*d*) translation and grammatical study of the following texts:

1914 and 1915:—Fouqué, Undine (Holt); Chamisso, Peter Schlemihl (Holt); Keller, Kleider machen Leute (Heath).

Mathematics.

GEOMETRY.—As under Geometry Part II for matriculation in Applied Science, see page 35.

ALGEBRA.—The three progressions, ratio, proportion, variation, permutations and combinations, binomial theorem, logarithms, theory of quadratic equations, as in Hall & Knight's Elementary Algebra (omitting Chapters 40-43 inclusive), or as in similar text-books.

TRIGONOMETRY.—Measurements of angles, trigonometrical ratios or functions of one angle, of two angles, and of a

multiple angle, as in Lock's Elementary Trigonometry, Chapters I to XII; Hall & Knight's Trigonometry, Chaps. I to XII inclusive, omitting Chap. V.; or as in similar text-books.

SECOND YEAR EXHIBITIONS IN ARTS.†

Six exhibitions, ranging in value from $100 to $150 each, will be offered for competition to students entering the second year, in September, 1913.

The subjects of examination are divided into two groups as follows:—

Group I.—Greek, Latin, French, German, English.

Group II.—Mathematics, Physics.

Candidates are required to offer two major subjects and one minor subject. The two major subjects must be selected from the same group, the minor subject from either group, the examination in the major subject being more extensive than that in the same subject presented as a minor subject. Two exhibitions of $150 each and two of $100 each are offered to candidates taking their major subjects from group I, and one exhibition of $150 and one of $100 to candidates taking their major subjects from group II.

The above exhibitions are open to all undergraduates in Arts, whether they are taking the B.A. or the B.Sc. course.

Requirements in each Subject.

Greek.

For 1913 and 1914:

(*As a Major Subject.*)

I. (*a*) Plato, Crito (Adam, Pitt Press).
(*b*) Euripides, Hecuba (Hadley, Pitt Press).
II. Composition and Translation at Sight.
III. History:—Morey's "Outlines of Greek History with a Survey of Ancient Oriental Nations" (American Book Company).

† Second year exhibitions are open to students who have passed the first year sessional examinations, provided that not more than two sessions have elapsed since their admission to the University; and also to candidates for entrance into the second year. The second year exhibition examination will, for candidates who have not previously entered the University, be regarded as a matriculation examination *pro tanto*.

(*As a Minor Subject.*)

The same as above, omitting I (*b*) and III.

Latin.

For 1913:

(*As a Major Subject.*)

I. (*a*) Cicero, pro Lege Manilia (Wilkins, Macmillan), or Cicero, pro Archia Poeta (King's Select Orations of Cicero, Clarendon Press), including the table of principal events in the Life of Cicero given in King's Introduction.

(*b*) Virgil, Bucolica (Sidgwick, Pitt Press), omitting the 2nd and 3rd Eclogues, or Virgil, Georgics I. (Page, Macmillan).

II. Composition and Translation at Sight.

III. Roman History:—From the First Punic War to the death of Sulla. Book recommended, How and Leigh, History of Rome (Longmans).

(*As a Minor Subject.*)

The same as above, omitting I (*b*) and III.

Note: For 1914, the work will be as above, with the exception that the Pro Lege Manilia and Virgil Georgics I. will not be accepted as alternatives.

French.

For 1913 and 1914:

(*As a Major Subject.*)

(*a*) Grammar; (*b*) translation at sight of an English passage into French; (*c*) French essay on a prescribed subject; (*d*) translation of passages taken from the prescribed texts; (*e*) a critical study of the following texts, tested by questions in the French language to be answered in French:—

Corneille, Cinna (Holt); Molière, Le Malade Imaginaire (Macmillan); Thiers, Expédition de Bonaparte en Egypte (Holt); France, Le Crime de Sylvestre Bonnard (Holt).

(*As a Minor Subject.*)

The same as above, omitting Molière and Thiers.

German.

For 1913 and 1914:

(*As a Major Subject.*)

(*a*) Grammar; (*b*) translation at sight from German into English, and from English into German; (*c*) a critical study and translation of the following texts:—

Schiller, Jungfrau von Orleans, with vocabulary (Heath & Co.); Kleist, Michael Kohlhaas (Holt); Fulda, Talisman (Heath).

(*As a Minor Subject.*)

The same as above, omitting Schiller.

English and History.

For 1913 and 1914:

(*As a Major Subject.*)

Literature.—Shakspere, Macbeth (ed. Deighton, Macmillan); Milton, Comus (ed. Bell, Macmillan); Johnson, Lives of Dryden and Pope (ed. Milnes, Clarendon Press Series).

History.—Church, Middle Ages.

(*As a Minor Subject.*)

The same as above, omitting Comus and Lives of Dryden and Pope.

Mathematics.

For 1913 and 1914:

(*As a Major Subject.*)

Plane Geometry.—Ordinary and advanced section courses of the First Year.

Algebra.—Selected course from Chaps. I.-XXXII. of Hall and Knight's Higher Algebra.

Theory of Equations.—Selected course from Burnside and Panton.

Plane Trigonometry.—As in the ordinary and advanced courses of the first year.

(*As a Minor Subject.*)

The mathematics of the first year ordinary course.

Physics.

(*As a Major Subject.*)

Ames' Theoretical Physics (Harper & Bros.)

(*As a Minor Subject.*)

Kimball's College Physics (Henry Holt & Co.)

THIRD YEAR SCHOLARSHIPS IN ARTS.*

The following five scholarships, of the annual value of $150 each, will be open for competition to students entering the third year in September, 1913:—

One for English and another language.

One for Latin or Greek and another language† (English excepted).

One for French or German and another language† (English excepted).

Two for Mathematics and Physics.

In addition to the above scholarships, the three following exhibitions, of the value of $150.00 each, are also offered for competition to students entering the third year:—

One for Philosophy and Psychology.

One for Chemistry and Physics.

One for Biology.

A bursary of $25 will be awarded to that one of the holders of these three exhibitions who is considered most deserving on entering the fourth year.

An exhibition of $50, to be known as the Hannah Willard Lyman Exhibition, will also be awarded annually in the fourth year, to the best woman student who may have been the holder of a third year exhibition in biology or chemistry or philosophy. Should there be no sufficiently deserving candidate, this exhibition may be awarded at the beginning of the third year to a woman candidate who may fail to obtain one of the five regular scholarships offered to third year students.

Of the two third year scholarships assigned to mathematics and physics, one is open to women only, the other to

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* Third year scholarships and exhibitions are open to students who have passed the second year sessional examination, provided that not more than three sessions have elapsed since their admission to the University; and also to candidates who have obtained what the Faculty may deem equivalent standing in some other university, provided that application be made before the end of the session preceding the examination. Double course students (Arts and Applied Science or Arts and Medicine) are not eligible for these scholarships.

† The language not chosen in the first instance may be taken as the second language.

men only. Should, however, no candidate be eligible for the scholarship open to men only, it may be awarded to a woman.

In the award of third year scholarships, the second year standing of candidates, in the subjects selected, will be taken into account.

In the event of no candidate of sufficient merit presenting himself, the scholarship assigned to any group of subjects may, at the discretion of the Faculty, be awarded in another group, whether a scholarship has been already assigned to that group or not.

Mackenzie Exhibitions:—

Four exhibitions, known as the Mackenzie Exhibitions, are awarded annually in the Department of Economics and Political Science. Two of these, of the value respectively of $100 and $50, tenable for one year, are awarded on the result of a special examination (see page 62), held in September, and open to students who have completed the work of the second year. The tenure of the exhibitions is conditional upon the holders pursuing their studies in the honour work in economics and political science of the third year. The other two exhibitions, of the value respectively of $100 and $50, are awarded on the results of the honour examination of the third year in economics and political science. The exhibitions will not be awarded except on satisfactory evidence of merit; their tenure is conditional upon the holders pursuing their studies in the honour work in economics and political science of the fourth year.

A fourth year Mackenzie exhibition may be held by a student who holds another; a third year exhibition cannot.

Requirements in each Subject.

Greek.

For 1913 and 1914:

Prose composition; translation at sight.

Study of the following texts:—Demosthenes, Olynthiacs (Glover, Pitt Press); Homer, Odyssey, Bk. ix. (Edwards, Pitt Press).

Greek History, to 404 B.C. Book recommended, Bury, History of Greece (8s. 6d. edition, Macmillan).

Latin.

For 1913:

Prose composition; translation at sight.

Study of the following texts:—(A) Ovid, Tristia, Book I. (Owen, (Clarendon Press); (B) Quintilian X. (Peterson, Clarendon Press), Chapters 1 and 2, or (instead of Quintilian) Tacitus, Dialogus (Gudeman, smaller edition, Allyn & Bacon); (C) Winbolt and Merk's Roman Life Reader, pp. 81-120 (Constable).

Roman History, 133 to 31 B.C. Book recommended, How and Leigh, History of Rome (Longmans).

For 1914, the texts will be the same as above, except that Quintilian will not be accepted as an alternative.

English and History.

For 1913 and 1914:

Literature.—Shakspere, Tempest, ed. Deighton (Macmillan); Milton, Paradise Lost, Books I and II, ed. Macmillan (Macmillan); Burke, On Conciliation with America, ed. Cook (Longmans); Arnold, Essays in Criticism, Second Series (Macmillan's Colonial Library). *History.*—Robinson, Introduction to the History of Western Europe (Ginn & Co.). *Composition.*—The candidate will be required to write an essay on some subject connected with the literature or history prescribed. High marks will be given for this subject.

Hebrew.

For 1913 and 1914:

Deuteronomy, Chaps. I-VII (Driver's Deuteronomy in International Commentary Series); also the record of the Call of the Prophets Isaiah, Jeremiah and Ezekiel, i.e., Is., VI.; Jer., I., and Ezk., I. Papers will also be set on easy prose composition, pointing, sight translation and miscellaneous questions.

French

For 1913 and 1914:

(*a*) French essay; (*b*) translation at sight from French into English and from English into French; (*c*) translation of passages from the prescribed texts; (*d*) questions on the subject matter of the following texts, and the lives of their authors:—Molière, Le Médecin malgré lui (Heath); Racine, Phèdre (Heath); Hugo, Les Misérables (Heath); Taine, Introduction â l'Histoire de la Littérature Anglaise (Heath); Rostand, Cyrano de Bergerac (Holt).

The entire examination will be held in the French language.

German.

For 1913 and 1914:

(*a*) German essay; (*b*) translation at sight from German into English and from English into German; (*c*) critical study and translation of the following texts:—

Goethe, Dichtung und Wahrheit, Bks. I, II, III (Heath); Schiller, Das Lied von der Glocke (Holt) and Wallenstein's Lager (Holt); Eichendorff, Aus dem Leben eines Taugenichts (Holt); Heine, Prose Selections (Macmillan).

Mathematics and Physics.

For 1913 and 1914:

Mathematics:

Differential and Integral Calculus.—Lamb's Infinitesimal Calculus and Osgood's Calculus.

Analytic Geometry.—C. Smith's Conic Sections.

Higher Trigonometry.—Carslaw's Plane Trigonometry.

Spherical Trigonometry.—The subject matter covered in the second year special course in this subject.

Algebra.—Determinants, as in Burnside and Panton's Theory of Equations.

Physics.

Electricity and Magnetism.—S. P. Thompson.

Chemistry and Physics.

For 1913 and 1914:

Modern Inorganic Chemistry (J. W. Mellor, 1912 edition).

Subject of Essay.—"Aqueous Solution".

Physics.

Properties of Matter, by Poynting and Thomson.

Philosophy and Psychology.

For 1913 and 1914:

Mellone, Text-book of Logic, chapters 1-10 inclusive; Mill, System of Logic, Bk. II, chap. 3, and Book III, chaps. 1-12, 14 and 21; Pillsbury, Essentials of Psychology; Berkeley's "Three Dialogues between Hylas and Philonous" (Open Court Philosophical Classics).

Biology.

For 1913 and 1914:

Animal Biology.

Outline of Evolutionary Biology, by Arthur Dendy (Constable & Co., London, 1912).

Plant Biology.

Plant Geography, by A. F. W. Schimper, authorized English translation by Fisher, revised by Groom and Balfour.

Economics.

For 1913 and 1914:

John Stuart Mill, Principles of Political Economy, Book I, Book II (Chapters XI, XIV, XV, XVI), Book III and Book V (Chaps. I, II, III, IV, V, VI, X, XI); F. Walker, Political Economy, Advanced Course, Parts I-V (inclusive); J. K. Ingram, History of Political Economy (edition 1893), pp. 1-42 (inclusive), 55-63 (inclusive), 87-104 (inclusive), 196-206 (inclusive), and 231-234 (inclusive); L. L. Price, A Short History of English Commerce and Industry.

III. PRIZES IN ARTS.

1. **The Neil Stewart Prize.**—An annual prize of $15 is open to all undergraduates and graduates of this University, and also to graduates of any other university, who are students of theology in some college affiliated to this University. The rules which govern the award of this prize are as follows:—

(1) The candidate selected for the prize shall have passed an examination in (a) Hebrew grammar, syntax, easy composition, pointing, and miscellaneous questions; (b) Translation from Hebrew into English, both prepared and unprepared. The Hebrew texts prescribed for the present year are as in the ordinary Hebrew course.

(2) Three papers will be set of three hours each:—One on pointing and translation (with lexical and grammatical notes); one on grammar and composition; and one on miscellaneous questions.

(3) Credit will be given to candidates showing a knowledge of Biblical Aramaic, and Rabbinic, provided the work done on classical Hebrew be thoroughly up to scholarship standard. Special application should be made for a paper on these subjects.

(4) Should no candidate's work be up to the scholarship standard the prize will be withheld, and a prize of $30 will be offered in the following year for the same.

The prize, founded by the late Rev. C. C. Stewart, M.A., and terminated by his death, was re-established by the liberality of the late Neil Stewart, Esq., of Vankleek Hill.

2. **Early English Text Society's Prize.**—This prize, the annual gift of the Early English Text Society, will be awarded for proficiency in the subjects of the language group in the English honour curriculum of the third and fourth years.

3. **New Shakespere Society's Prize.**—This prize, the annual gift of the New Shakspere Society, open to graduates and undergraduates, will be awarded for a critical knowledge of the following plays of Shakspere:—Hamlet, Macbeth, Othello, King Lear.

4. **Charles G. Coster Memorial Prize.**—This prize, of the value of $25.00, and intended as a tribute to the memory of the late Rev. Chas. G. Coster, M.A., Ph.D., Principal of the Grammar School, St. John, N.B., is offered for competition, by Mr. Colin H. Livingstone, B.A., to undergraduates (men and women) from the Maritime Provinces (Nova Scotia, New Brunswick and Prince Edward Island). It is awarded on the

decision of the Dean of the Faculty of Arts to that student in Arts from the Maritime Provinces who shows the greatest proficiency in the examinations at the end of the session.

5. **Annie McIntosh Prize.**—The income of the sum of $425, subscribed by the pupils and friends of the late Miss Annie M. McIntosh, will be offered as a prize to students of the Royal Victoria College in such subject, or for such work, as the Faculty may determine.

6. **Penhallow Prize.**—The income of the sum of $731 collected by the Arts Undergraduate Society in 1911, to be assigned annually to the Department of Botany for a prize to be known as the "Penhallow" prize.

For medals and certificates awarded in Arts, see page 71.

The names of those who have taken honours or certificates will be published in order of merit, with mention, in the case of students of the first and second years, of the schools in which their preliminary education has been received.

IV. SCHOLARSHIPS, EXHIBITIONS AND PRIZES IN APPLIED SCIENCE.

I.—Awarded on the result of Special Examinations.

1. Two prizes, each of $10.00, presented by J. M. McCarthy, Esq., B.A.Sc., to students entering the third year, for proficiency in levelling and transit work.

2. Scholarships covering four years' tuition in the Faculty of Applied Science are also awarded annually by the Grand Trunk and Canadian Pacific Railway Companies. These are open for competition to apprentices and other employees of the Companies under twenty-one years of age, as well as to minor sons of employees, and the award is made on the result of the June matriculation examination for entrance to Applied Science. For full particulars as to number of scholarships offered, conditions, etc., application should be made, in the case of the Grand Trunk Railway, to Mr. D. E. Galloway, Assistant to the President, G.T.R. Offices, Montreal; and, in the case of the Canadian Pacific Railway, to Mr. C. H. Buell, office of the Vice-President, C.P.R. Offices, Montreal.

3. Messrs. Babcock & Wilcox, Ltd., offer every second year a scholarship of the value of $200.00 per annum, tenable for two years, to the best all-round man among the Engineering students who, having completed the work of the first and second years, are about to enter the third year, and who intend to make a special study of the subject of Steam Engineering. The condition under which this scholarship is awarded may be ascertained on application to the Dean of the Faculty.

This scholarship will not be awarded in the fall of 1913.

4. The P. S. Ross Entrance Exhibition. For particulars, see page 51.

II.—Awarded on results of Sessional Examinations or for special theses.

1. A British Association exhibition of $50.00 and a prize of $25.00, at the end of the third year, to the students who obtain the highest and the second highest aggregate marks, respectively, in the sessional examinations in strength of materials and mechanics of the third year.

2. Three prizes of $25.00, $15.00 and $10.00, at the end of the second year, to the students obtaining the highest, and the second and third highest, aggregate marks, respectively, in the sessional examinations in analytic geometry, calculus and mechanics of the second year.

3. A Scott exhibition of $50.00, founded by the Caledonian Society of Montreal, in commemoration of the centenary of Sir Walter Scott, and two prizes of $25.00 and $15.00, at the end of the first year to the students obtaining the highest, and the second and third highest aggregate marks, respectively, in the sessional examinations in the mathematics, descriptive geometry and physics of the first year.

4. Workshop Prize.—A prize of $20.00, presented by Mr. C. J. Fleet, B.A., B.C.L., for bench and lathe work in the wood-working department, open to students of not more than two terms standing in workshop practice.

5. A prize of $50.00, presented by Mr. James Tighe, B.A.Sc., for research work in hydraulics.

6. An exhibition offered to graduates by Mr. A. E. Childs, M.Sc., for a special research on "The flow of gas through pipes under pressure."

7. A prize of $25.00 presented by Messrs. Anglins, Ltd., to the student obtaining the highest marks in the subject of Historical Drawing in the second year of the Department of Architecture.

8. A prize of $25.00 presented by Messrs. Anglins, Ltd., to the student obtaining the highest aggregate marks in Construction (Courses Nos. 24, 25, 26, 27) in the second and third years in the Department of Architecture.

9. The following prizes are offered for the best summer essays:—

To the students of the Civil Engineering course, a prize of $25, presented by E. B. Greenshields, Esq., B.A.

To the students of the Electrical Engineering course, from a friend, a prize of $25.

To the students of the Mining Engineering course, a prize of $25, presented by Geo. E. Drummond, Esq.

To the students of the Metallurgical Course, a prize of $25, presented by Milton L. Hersey, Esq., D.Sc.

To the students of the Mechanical Engineering course, a prize of $25, presented by the Crosby Steam Gauge and Valve Co.

Four prizes, each of the value of $25, are offered for competition to student members of the Canadian Society of Civil Engineers, for the best papers on subjects in any department of engineering. The summer theses prepared by students of this University are available for this competition.

Three prizes, each of the value of $25, and the President's gold medal are offered for competition to student members of the Canadian Mining Institute for the best papers on mining subjects.

10. The sum of $50.00 has been voted by the Undergraduates' Society of the Faculty of Applied Science, to be

given as prizes for the best papers read before the Society during the session 1913-1914.

11. Certificates of merit are given to such students as take the highest place in the sessional and degree examinations.

For other prizes given in connection with Medals in Applied Science, see under Medals and Prizes, page 72.

III.—Awarded at the Discretion of the Faculty.

1. THE HON. ROBERT JONES' SCHOLARSHIP, having a value of One Hundred and Twenty-five Dollars ($125.00) per annum, " is granted from time to time to some poor student for the full term of study in the Faculty of Applied Science."

Application for this scholarship should be made through the Dean of the Faculty of Applied Science. In awarding the scholarship the standing of the student in the matriculation examination will be considered, and the scholarship will not be continued if the standing of the student at any time during his course proves to be unsatisfactory.

2. The Baylis Scholarship, founded in memory of Mr. and Mrs. James Baylis of Montreal, and having an annual value of $100.00, is awarded to some student who is in need of financial assistance to complete his course on entering the second year of the Faculty. The scholarship will be continued during the third and fourth years, if the student's standing continues to be satisfactory.

Applications for this scholarship should be made through the Dean of the Faculty of Applied Science.

3. Three research and teaching fellowships of the value of $500 each, have been established in the Mining Department—one endowed in memory of the late Sir William Dawson, and two supported by Dr. James Douglas. All three fellowships are awarded annually if suitable candidates offer.

4. Dr. James Douglas, a member of the Board of Governors, has provided for twelve tutorial bursaries in the Faculty of Applied Science. In assigning these bursaries

account will be taken of the circumstances of the applicants as well as of their academic standing.

These bursaries have a value of $100.00 per annum, and carry the obligation of giving tutorial instruction equivalent to one evening a week, to the satisfaction of the Faculty Committee. Students in the third and fourth years of Applied Science only are eligible.

V. EXHIBITIONS AND PRIZES IN MEDICINE.

1. **The Final Prize.**—A prize in books (or a microscope of equivalent value), awarded for the best examination, written and oral, in the final branches. The Holmes' medallist is not permitted to compete for this prize.

2. **The Fourth Year Prize.**—A prize in books, awarded for the best examination, written and oral, in all the branches of the fourth year course.

3. **The Joseph Hils Prize.** (Founded by the late Dr. Joseph Hils of Woonsocket, R.I.)—A prize in books, awarded to the student who obtains the highest number of marks for a special examination in materia medica and therapeutics.

4. **The Third Year Prize.**—A prize in books awarded for the best examination, written and oral, in the branches of the third year.

5. **The Joseph Morley Drake, M.D., Prize.** (Founded by the late Joseph Morley Drake, M.D.)—A microscope, to be awarded to the student of the third year who obtains the highest number of marks for the examinations in pathology and bacteriology.

6. **The Second Year Prize.**—A prize in books for the best examination in all the branches of the second year course.

7. **The First Year Prize.**—A prize in books for the best examination in all the branches of the first year course.

8. One of the Rev. Samuel Massey Exhibitions, founded by Mr. George Massey, in memory of his late father, Rev. Samuel Massey (value, $62.50), will be at the disposal of the Faculty of Medicine for the session 1913-1914.

For the medals awarded in this Faculty, see page 73.

VI. EXHIBITIONS AND PRIZES IN LAW.

1. An exhibition, of the value of $50 per annum—to be known as the Alexander Morris Exhibition—has been founded in memory of the late Hon. Alexander Morris, M.A., D.C.L., of Toronto, Ont., and will be awarded to the student who obtains the highest standing in the second year.

2. Various money prizes (among the number being a prize of $15, given by the Junior Bar Association of the Province of Quebec, to the student of the final year who takes the highest standing in civil procedure), are awarded to the students of each year who obtain the highest distinction at the examination held at the close of the session. No prize will, however, be awarded to any student unless a sufficiently high standing is attained.

For medals in Law, see under Medals, etc., page 73.

VII. EXHIBITIONS IN MUSIC.

Angus Scholarship:—$150 for three years, covering a Regular student's course, given by Mr. R. B. Angus.

Ross Scholarship:—$150 for three years, covering a Regular student's course, given by Mr. James Ross.

Gibb Scholarship:—$50 for three years, given by Mr. Lachlan Gibb.

Hooper Scholarship:—$50 given by Mr. George Hooper.

Samuel Davis' Memorial Scholarship:—
$84 given by Dr. M. Lauterman.

A Scholarship:—$50 given by a senior student of the Conservatorium.

also the following:—

Organ:—$50 given by Messrs. Cassavant.

Violoncello:—$50 given by Mr. George Hooper.

Pianoforte:—$50 given by Mr. C. W. Lindsay.

Pianoforte:—$25 per year for three years, given by Mr. Percy Gault.

Singing:—$50 given by the Conservatorium.

Singing:—$50 given by Lady Drummond.

LOAN FUNDS.

1. A Fund has been established by the Applied Science Class of 1899, to be known as "The Class of 1899 Fund," for the purpose of aiding, each year, one or more students who, upon the completion of their second year work, require assistance to enable them to finish their course of study. The loans from this fund made to students will be repayable after graduation. Applications should be made through the Dean.

2. The George Henry Frost Fund has been created by the gentleman whose name it bears for the purpose of aiding students who, when commencing the work of the second or subsequent years, in the Faculty of Applied Science, require assistance to enable them to complete their course. Loans from this fund will bear interest at three per cent. and will be repayable within three years after graduation. In making loans from this fund the academic standing of the student will be taken into account.

MEDALS, CERTIFICATES AND HONOURS.

I. IN ARTS.

1. **Gold Medals** will be awarded in the B.A. Honour examinations to students who take the highest honours of the first rank in the subjects stated below, and who shall have passed creditably the ordinary examinations for the degree of B.A., provided they have been recommended therefor to the Corporation by the Faculty, on the report of the examiners:—

The Henry Chapman Gold Medal for Classical Languages and Literature.

The Prince of Wales Gold Medal for Mental and Moral Philosophy.

The Anne Molson Gold Medal for Mathematics and Natural Philosophy.

The Shakspere Gold Medal for English Language and Literature.

The Logan Gold Medal for Geology, Mineralogy and Palæontology.

The Major Hiram Mills Gold Medal for Biology.

The Governor-General's Gold Medal for Modern Languages and Literature.

In addition to the above, certain medals are offered annually by the Alliance Française, at the discretion of the Department of Modern Languages.

If there be no candidate for any medal, or if none of the candidates fulfill the required conditions, the medal will be withheld, and the proceeds of its endowment for the year may be devoted to prizes in the subject for which it was intended.

2. **Special Certificates** will be given to those candidates for B.A. who have been placed in the first class at the ordinary B.A. examination; have obtained three-fourths of the maximum marks in the aggregate of the courses proper to the third and fourth years, are in the first class in not less than half of these courses, and have no third class. At this

examination, no candidate who has taken exemptions can be placed in the first class unless he has obtained first class in the examination in four of the subjects offered (each corresponding to a full course of lectures), and has no third class.

3. **Certificates** of high general standing will be granted to those undergraduates of the first two years who have obtained three-fourths of the maximum marks in the aggregate of the studies proper to their year, are placed in the first class in not less than half the subjects, and have not more than one third class.

4. **Graduates** who attend lectures in any subject, and pass the corresponding examinations therein, may obtain certificates of their standing, whether the course in question be ordinary or honour.

For prizes in Arts, see page 63.

II. IN APPLIED SCIENCE.

1. The Governor-General's silver medal (the gift of His Royal Highness the Duke of Connaught) will be awarded for graduate research work.

2. A British Association medal is open for competition to students of the graduating class in each of the ten courses, and, if the examiners so recommend, will be awarded to the student taking the highest position in the final examinations. The British Association medals and exhibition were founded by the British Association for the Advancement of Science, in commemoration of the meeting held in Montreal in the year 1884.

3. A gold medal and three prizes of $25, offered by the Canadian Mining Institute. For further particulars see page 246.

4. Honours.—On graduation, honours will be awarded for advanced work in professional subjects.

5. Certificates may be given to students who have passed through any of the special courses attached to the curriculum.

For prizes in Applied Science, see page 64.

III. IN LAW.

1. The Elizabeth Torrance Gold Medal is awarded to the student who obtains the highest marks in the final examinations, provided that his answers are, in the estimation of the Faculty, of sufficient merit to entitle him to this distinction.

For prizes in Law, see page 68.

IV. IN MEDICINE.

1. **The Holmes Gold Medal,** founded by the Medical Faculty in the year 1865, as a memorial of the late Andrew Holmes, Esq., M.D., LLD., late Dean of the Faculty of Medicine, is awarded to the student of the graduating class who receives the highest aggregate number of marks in the different branches comprised in the medical curriculum.

The student who gains the Holmes Medal has the option of exchanging it for a bronze medal and the money equivalent of the gold medal.

2. **The Sutherland Gold Medal,** founded in 1878 by the late Mrs. Sutherland, in memory of her late husband, William Sutherland, M.D., formerly Professor of Chemistry in this Faculty, is awarded for the best examination in general and medical chemistry, together with a creditable examination in the primary branches. The examination is held at the end of the third year.

3. **The Wood Gold Medal,** founded by Casey A. Wood, M.D., is awarded to the student of the graduating class who receives the highest aggregate number of marks in the clinical branches of the final year. The winner of the Holmes Medal and the winner of the Final Prize are not permitted to compete for this medal.

4. **The Woodruff Gold Medal,** founded by Dr. Thomas A. Woodruff, of Chicago, in memory of his late father, Samuel De Veaux Woodruff, is awarded to the student of the final year who receives the highest number of marks for a special clinical examination in the subjects of ophthalmology and oto-laryngology.

For prizes in Medicine, see page 68.

FEES.

GENERAL REGULATIONS.

1. Fees shall be paid to the Bursar on or before October 10th. The registration ticket must be shown to the Bursar before the fee is paid. After October 10th an additional fee of $2.00 will be exacted of all students in default.

No fees will be refunded to partial students under any circumstances whatever.

2. Immediately after October 20th the Bursar shall send to the Deans of the several Faculties a list of the registered students who have not paid their fees, on receipt of which the Deans shall cause their names to be struck from the registers of attendance, and such students cannot be re-admitted to any class except on presentation of a special ticket, signed by the Bursar, certifying to the payment of fees.

Students registering after October 20th shall pay their fees at the time of registration, failing which they become subject to the provisions of Regulation 2.

MATRICULATION FEES.

See page 20.

FEES IN ARTS.

(*For Regulations re payment, see above.*)

Sessional fee for undergraduates and conditioned undergraduates $58.00

Sessional fee for undergraduates and conditioned undergraduates in the School of Commerce.... $47.00

(This includes fees for laboratories, library, gymnasium and graduation.)

At the request of the students themselves and by the authority of Corporation, an additional fee of $10.00 will be

exacted from all men undergraduates and conditioned undergraduates, for the support of the Literary Society, the Undergraduates' Society, the Canadian Club, the Union and athletics. Women students pay an additional fee of $3, for athletics, and $2.50 for the Royal Victoria College Undergraduates' Society.

Fees for partial students.—(first and second years.)—$16 per session for one course† and $10 for one half-course† of lectures, including the use of the library; $12 per session for each additional course; $8 per session for each additional half-course. In addition there will be a fee of $3 for athletics.

Fees for partial students.—(third and fourth years.)—$22 per session for one course† and $13 for one half-course† of lectures, including the use of the library; $20 per session for each additional course; $11 per session for each additional half-course. In addition there will be a fee of $3 for athletics.

Partial students taking the full curriculum in any one year pay the same fees as undergraduates in that year.

Graduates in Arts of this University are allowed, on payment of one-half of the usual fees, to attend all lectures in the undergraduate course, except those for which a special fee is exigible. Graduates of other universities attending full courses in affiliated theological colleges are given the like privilege.

Fees for special courses of lectures, given after 4 p.m.:—

For one lecture per week during one term.....	$ 3.00
For two lectures per week during one term.....	4.00
For one lecture per week during the session.....	4.00
For two lectures per week during the session.....	6.00

For more than two lectures per week regular partial student rates will be charged.

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† The lectures and laboratory work, if any, in one subject in any of the four college years constitute a "course," if occupying three hours per week; a "half-course" if occupying less than three hours per week.

The fee for athletics and the caution money deposit are not exacted from partial students attending only the courses of lectures included in the teachers' syllabus.

Fees in the School of Commerce:

Sessional Fee	$47.00
For Political Economy	5.00
For Accountancy	10.00
For Commercial Law	10.00
For all three subjects	20.00

At the request of the students themselves, and by authority of Corporation, an additional fee of $10.00 will be exacted from all undergraduates and conditioned undergraduates for the support of the Literary Society, the Undergraduates' Society, the Canadian Club, the Union and athletics.

Special fees:—

Supplemental examination in any subject or any part of a subject, taken at the regular date fixed by the Faculty	$ 2.00
Supplemental examination, when granted at any other time than the regular date fixed by the Faculty, for each examination period	5.00

All fees for supplemental examinations must be paid to the Bursar, and the receipts shown to the Dean before the examination.

Fee for the degre of B.A. or B.Sc. (Arts) conferred in absentia (except when the candidate has been specially exempted by the Faculty)	$20.00

Caution Money.—Every student is required to deposit with the Bursar the sum of $5, as caution money, to cover damage done to furniture, apparatus, books, etc. This amount, less deductions (if any), will be returned at the close of the session.

FEES IN APPLIED SCIENCE.

(*For Regulations re payment, see page 74.*)

Sessional fee for the undergraduate course in Architecture $147.00
Sessional fee for all other undergraduate courses... 197.00

At the request of the students themselves, and by authority of Corporation, an additional fee of $10.00 will be exacted from all undergraduates and conditioned undergraduates for the support of the Literary Society, the Undergraduates' Society, the Canadian Club, the Union and athletics.

(Students who were in attendance as undergraduates or conditioned undergraduates in this Faculty during the session 1909-1910, or previously, will be allowed to complete their several courses on payment of $107 for the undergraduate course in Architecture and $182 for any other undergraduate course.)

Graduates of this Faculty taking an additional undergraduate course will pay one-half of the undergraduate fee.

Students taking the six year double course in Arts and Applied Science shall pay full fees in Arts for the first three years of their course and the following fees in Applied Science:—

Sessional fee for second and third years of double course (summer school in September, see page 194) $50.00
*Sessional fee for fourth, fifth and sixth years of double course 207.00

The fees for partial students are:—$4.00 for library, $3.00 for athletics, $1.00 for the Undergraduates' Society, and a fee at the rate of $7.00 for an hour a week of instruction during the academic year, but the maximum fee shall in no case exceed the full undergraduate fee.

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* (For students in attendance during the session 1909-1910, or previously, this fee will be $182.)

CAUTION MONEY.—Every student is required to deposit with the Bursar the sum of $10, as caution money, to cover damage done to furniture, apparatus, books, etc. This amount, less deductions (if any), will be returned at the close of the session.

Fee for the degree of B.Sc., conferred in absentia (except when the candidate has been specially exempted by the Faculty) $20.00

For regular supplemental examinations, the fee is $2.00 for each subject. It must be paid to the Bursar of the University not later than the day before the examination, and receipt for the same must be shown to the professor in charge before the examination papers are distributed.

The fee for a special supplemental examination is $5.00.

FEES IN MEDICINE.

(*For Regulations re payment, see page 74.*)

FIRST YEAR.

Sessional fee for the undergraduate course.....	$147.00
Fee for athletics, Union, etc.*.....	10.00
Caution money (deposit)†	10.00
	$167.00

SECOND YEAR.

Sessional fee for the undergraduate course	$147.00
Fee for athletics, Union, etc.*.....	10.00
Caution money (deposit)†	10.00
	$167.00

* At the request of the students themselves and by authority of Corporation, this additional fee of $10.00 is exacted from all men undergraduates and conditioned undergraduates for the support of the Literary Society, the Undergraduates' Society, the Canadian Club, the Union and athletics.

† The caution money deposit is intended to cover breakages in the different laboratories, etc. The amount of the deposit, less deductions (if any), will be returned at the close of the session.

THIRD YEAR.

Sessional Fee	$147.00
Fee for athletics, the Union, etc.*	10.00
Caution money deposit†	10.00
	$167.00

FOURTH YEAR.

Sessional fee	$147.00
Fee for athletics, the Union, etc.*	10.00
Caution money deposit†	10.00
	$167.00

Students who were in attendance as undergraduates or conditioned students in this Faculty during the session 1909-1910, or previously, will be allowed to complete their course on payment of fees as under:—

FIFTH YEAR.

Sessional fee	$125.00
Caution money deposit†	10.00
Hospitals	10.00
Maternity Hospital (half fee)	6.00
Fee for athletics, the Union, etc.*	10.00
Fee for the Degree of M.D., C.M.‡	30.00
	$191.00

Students taking the seven year double course in Arts and Medicine shall pay the following fees: in the first and second years, full undergraduate fees in Arts; in the third year, full fees in Arts and $50 in Medicine; in the fourth year, $30

* At the request of the students themselves and by authority of Corporation, this additional fee of $10.00 is exacted from all men undergraduates and conditioned undergraduates for the support of the Literary Society, the Undergraduates' Society, the Canadian Club, the Union and athletics.

† The caution money deposit is intended to cover breakages in the different laboratories, etc. The amount of the deposit, less deductions (if any), will be returned at the close of the session.

‡ When the degree is conferred in absentia an additional fee of twenty dollars will be exacted, unless the candidate has been specially exempted by the Faculty.

in Arts and full fees in Medicine; in the fifth, sixth and seventh years, full fees in Medicine.

Sessional fee for students repeating a session $35.00

Repeating students must also pay in addition to the above, $10 for athletics, etc., and make the usual caution money deposit of $10.

Fee for students from other colleges who have paid full fees there for courses to be taken..... $35.00

These students are also required to pay in addition $10 for athletics, etc.,* the Hospital fees exacted in the year to which they are admitted, and to make the usual caution money deposit of ten dollars.

An ad eundem fee of $10 will be charged students entering from another university in the second, third, fourth or fifth year of the course.

Partial students will be admitted on payment of special fees.

Fee for supplemental examination ..... $ 5.00
Fee for the regular Graduate Course (for details of courses see Medical Announcement)..... $50.00
Fee for the course in Public Health and diploma.. $50.00

FEES IN DENTISTRY.

Students in Dentistry pay the following fees:

Sessional fee $125.00
Fee for athletics, the Union, etc.* 10.00
Caution money deposit† 10.00
Graduation fee‡ 30.00

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*At the request of the students themselves and by authority of Corporation, this additional fee of $10.00 is exacted from all men undergraduates and conditioned undergraduates for the support of the Literary Society, the Undergraduates' Society, the Canadian Club, the Union and athletics.

† The caution money deposit is intended to cover breakages in the different laboratories, etc. The amount of the deposit, less deductions (if any), will be returned at the close of the session.

‡ When the degree is conferred in absentia an additional fee of twenty dollars will be exacted, unless the candidate has been specially exempted by the Faculty.

FEES IN LAW.

(*For Regulations re payment, see page 74.*)

Registration fee	$ 5.00
Sessional fee for the undergraduate course	77.00
Fee for athletics, the Union, etc.*	10.00
Graduation fee‡	12.50
Fee for Supplemental Examination	2.00

(Students who were in attendance as undergraduates in this Faculty during the session 1910-1911, or previously, will be allowed to complete their course on payment of $67 per session.)

Students taking the six year double course in Arts and Law shall pay full fees for each of the four years in Arts and full fees for each of the three years in Law.

Fees for partial students:—

For course in Roman Law	$20.00
For each of the following courses: successions, criminal law, commercial law, obligations, civil procedure	15.00
For each of the shorter courses	10.00
Athletics Fee	3.00

Caution Money.—Every students is required to deposit with the Bursar the sum of $5, as caution money, to cover damage done to furniture, loss of books, etc. This amount, less deductions (if any), will be returned at the close of the session.

Fee for the degree of D.C.L. $80.00

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*At the request of the students themselves and by authority of Corporation, this additional fee of $10.00 is exacted from all men undergraduates and conditioned undergraduates for the support of the Literary Society, the Undergraduates' Society, the Canadian Club, the Union and Athletics.

‡When the degeee is conferred in absentia an additional fee of twenty dollars will be exacted, unless the candidate has been specially exempted by the Faculty.

FEES IN THE GRADUATE SCHOOL.

For the course leading to the degree of M.A. or M.Sc.	$40.00
For each year of the course leading to the degree of Ph.D.	$40.00
Graduation fee for M.A. or M.Sc.	20.00
" " " " (*In absentia*)	40.00
" " Ph.D.	30.00
" " D.Sc.	80.00
" " D.Litt	80.00
" " LL.D. (in course)	80.00

The examination and graduation fee is payable when the candidate presents himself for examination and is not returnable if he is unsuccessful. If, however, a candidate for the degree of M.A. or M.Sc. fails he may present himself in a subsequent year without further payment of fees. A candidate for the degree of D.Sc. or D.Litt. in case of failure may present himself in a subsequent year upon payment of an additional sum amounting to one-half of the usual fee for this degree.

Lecturers, tutors and demonstrators in this University who are proceeding to the degree of Master of Arts, Master of Science, or Doctor of Philosophy, shall be exempt from the tuition fees, but will be required to pay the fee for graduation in every case.

No fee shall be charged for the degree of LL.D., granted "honoris causa."

FEES IN MUSIC.

Regular students, per session	$150.00

(This sum will also cover the fees for the diploma or degree examination at the end of each year.)

Senior partial students, per term of 12 weeks	$35.00
Junior partial students, per term of 12 weeks	28.00
Examination and graduation fee for Mus. Doc.	80.00

This fee is payable in two instalments. The first $40.00 must be paid when the candidate submits his exercise, and is not returnable if that exercise is not approved, but he may in a subsequent year submit another exercise upon payment of one-half of the above amount. The second instalment of $40.00 must be paid before the subsequent examination, and is not returnable should the candidate be unsuccessful, but he may in a subsequent year present himself again for examination upon payment of one-half the above amount.

Information regarding fees to be paid by students for class work and by occasional students, as well as regarding fees for certificates and examinations, when these are not covered by the regular fee, will be found in the special syllabus issued by the Conservatorium of Music.

MISCELLANEOUS FEES.

Library (optional for students in Medicine; included in sessional fee in the case of all others)	$4.00
Gymnasium (optional for undergraduates in Law and Medicine, and also for partial students in all Faculties; included in sessional fee in the case of all others)	2.50
Certificate of standing (general)	1.00
Certificate of standing, accompanied by a statement of classification in the several subjects of examination	2.00

All applications for certificates must be addressed to the Registrar of the University, accompanied by the required fee.

No certificates are given for attendance on lectures unless the corresponding examinations have been passed.

MORALS AND DISCIPLINE.

1. University discipline shall be exercised by the several Faculties, and by the Committee on Morals and Discipline, subject in the cases hereinafter mentioned to revision or confirmation by Corporation.

2. Subject to the provisions of the following section, each Faculty shall be entitled to exercise University discipline over its own students.

3. All cases of discipline involving the interests of more than one Faculty, or of the University in general, shall be dealt with by a standing committee of Corporation, to be known as the Committee on Morals and Discipline, which shall consist of the Vice-Principal, the Deans of the several Faculties, one member of the Board of Governors and another member of Corporation who must be outside of the University staff. The two members last named shall be appointed annually at the regular meeting of the Corporation in February. The Committee shall have power to add to their number the President and Vice-President of the Students' Council in cases in which that body has taken action and made a report.

4. All such cases of discipline as are referred to in subsection 3 shall be reported to the Principal, or, in his absence, to the Vice-Principal, or, in the absence of both, to the senior Dean present in the City. If the Principal, or, as the case may be, the Vice-Principal or the Dean, deems action necessary, the matter shall be reported to the Committee on Morals and Discipline.

5. When sentence of expulsion or of suspension for more than three months has been pronounced by a Faculty, or by the Committee on Morals and Discipline, the Corporation may entertain an appeal.

6. "University discipline" shall mean any appropriate method of exercising authority over students, and shall, but without prejudice to the foregoing generality, include the power of expulsion, suspension, disqualifying from competing for scholarships, exhibitions, medals, prizes or honours, imposing fines, not exceeding $25, on any student, levying assessments for damage done, reporting to parents or guardians and admonition.

7. Any student found guilty of immoral, dishonest, disorderly or improper conduct, or of wrongfully causing damage to person or property shall be liable to University discipline.

8. If on an occasion of general disorder on the part of a year, class, or group of students, damage be done to University property, or acts committed meriting discipline, and the individuals who have done such damage, or committed such acts, have not been discovered, an assessment to cover the damage may be laid, or a fine imposed, or both, on all the members of such year, class or group.

9. While in college, or in the college grounds, students shall conduct themselves in the same orderly manner as in the class-rooms. Smoking is prohibited in the college buildings, except in such rooms, if any, as may be set apart for that purpose. Any professor observing improper conduct on the part of a student in the college buildings or grounds may admonish him, and, if necessary, report him to the Dean of the Faculty in which he is enrolled. Without, as well as within the walls of the college, every student is required to maintain a good moral character.

COLLEGE GROUNDS AND ATHLETICS.

The management of the college grounds and of out-door athletics and sports is under the control of the Athletics Committee of Corporation.

This Committee is responsible for the general maintenance of all University grounds and retains the ultimate authority and power of supervision in all matters affecting athletics in the University. All matters which may in any way affect athletics must be referred to this committee and its approval must be obtained before any departure is made from the authorized routine.

The following extracts are made from the rules and regulations of the Committee, for the guidance of members of the University and the several athletic clubs and associations which are from time to time permitted to use the grounds:

During the summer season the Sherbrooke Street gates shall be closed between 10 p.m. and 6 a.m. every day, and the University and McTavish Street gates between 6 p.m. and 7 a.m. on week days and the whole day on Sunday.

Such persons as are entitled to use the grounds shall be provided with tickets renewable each year. Those entitled to tickets are the members of the University and prominent benefactors, and the families of Governors and Professors.

The several Clubs may be permitted to issue special tickets, entitling the holders to admission to the grounds for the purpose of viewing matches, or for other special occasions of public interest.

All students entering the University for the first time and all others desirous of taking part in football matches, or otherwise engaging in violent athletic contests, must pass a medical examination, to be held under the direction of the Medical Director of Physical Education during the month of October. A complete record of all such examinations shall be kept by the Director or some other officer appointed to this

duty. The managers and captains of Clubs, or other responsible executive officers, are required to insist upon the strict observance of the rule in regard to medical examination, and all the rules and regulations of the Committee which concern them.

All Clubs must submit their regulations, rules, and by-laws, and any changes in the same, for the approval of the Committee. They must make application for the use of such portions of the grounds as they require, and for any special privileges.

Clubs must not engage in matches with outside clubs except with the approval of the Committee.

The Athletic Association must submit its programme for each year for the approval of the Committee.

All students in good standing who are taking a course of study held to be sufficient by a special Committee of the Faculty in which they are enrolled will be allowed to take part in athletics, subject, however, to the general regulation regarding medical examination.

Suspension from lectures for any cause, or absence from more than one-eighth of the total number of lectures given in any course, as shown by the monthly reports furnished to the Dean of each Faculty by the several professors and lecturers, shall be considered as sufficient ground to disqualify a student for engaging in athletic contests.

All students of the University are required to pay a fee of three dollars ($3.00) for the use of the grounds. The amount so paid is handed over to the Executive of the Students' Council (less about $800, which is expended in the upkeep of the grounds in connection with athletics), and is by this body expended in the interest of College athletics, under the general direction of the Athletics Committee of Corporation.

The amount derived as grounds and athletics fees from the students of the Royal Victoria College is placed at the disposal of the Committee in charge of the grounds, for expenditure in the interests of women-students.

The annual sports of the University are held on the third Friday of October in each year. The day is observed as a holiday.

UNIVERSITY ATHLETIC ASSOCIATION.

All matters connected with athletics at the University are under the immediate supervision of the University Athletic Association, which, in turn, is responsible to the "Athletics Committee of Corporation." The executive of the Athletic Association consists of the presidents of the various clubs of the Association, twelve in number.

The Track Club is entrusted with the regulation and encouragement of "Track and Field Athletics;" the management of the Inter-class sports and of the annual University sports.

The Rugby Football Club is represented by a senior and intermediate team in the Intercollegiate Union, and a junior team in the Q.R.F.U. In addition to these championship matches, a series of inter-class matches is played annually for the "Wood Cup."

The Skating and Hockey Club has a well-established reputation. The Hockey Club is represented by senior and intermediate teams in the Intercollegiate League. As in football, a series of inter-class games is played annually, in this case for the "Capper Trophy."

The Association Football Club, the Basket-Ball Club, the Boxing Club, the Cricket Club, the Harriers' Club, the Lawn Tennis Club, the Wrestling Club, the Fencing Club, the Polo Club, and the Swimming Club, are the remaining clubs under the Association. Most of them conduct inter-class matches, and have a senior team, which represents the University in outside matches. The Association Football, Basket-Ball, Boxing and Wrestling Clubs, Tennis Club and Swimming Clubs are represented in Intercollegiate Unions.

PHYSICAL EDUCATION.

For particulars, see page 340.

ACADEMIC DRESS.

Professors, lecturers and students are required to wear academic dress at lectures, except in those cases in which a dispensation shall have been granted by the Faculty.

Undergraduates shall wear a plain black stuff gown, not falling below the knee, with round sleeve cut above elbow.

Bachelor of Arts.—Black stuff gown, falling below knee, with full sleeve cut to elbow and terminating in a point (similar to that of the Cambridge B.A.); hood, black silk, lined with pale blue silk and edged with white fur.

Bachelor of Science.—The same gown as Bachelors of Arts; hood, black silk, lined with yellow silk and edged with white fur.

Bachelor of Civil Law.—The same gown as Bachelors of Arts; hood, black silk, lined with French grey silk and edged with white fur.

Bachelor of Architecture.—The same gown as Bachelors of Arts; hood, black silk, lined with white silk and edged with white fur.

Bachelor of Music.—The same gown as Bachelors of Arts; hood, black silk, lined with pale mauve silk, and edged with white fur.

Master of Arts.—Black gown of stuff or silk, falling below knee, with long sleeve with semi-circular cut at the bottom (similar to that of the Cambridge M.A.); hood, black silk, lined with pale blue silk.

Master of Science.—The same gown as Masters of Arts; hood, black silk, lined with yellow silk.

Doctor of Medicine.—The same gown as Masters of Arts; hood, scarlet cloth, lined with dark blue silk.

Doctor in Dental Science.—The same gown as Masters of Arts; hood, scarlet cloth, lined with pink silk.

Doctor of Laws.—The same gown as Masters of Arts; hood, scarlet cloth, lined with white silk.

Doctor of Literature.—The same gown as Masters of Arts; hood, scarlet cloth, lined with pale blue silk.

Doctor of Science.—The same gown as Masters of Arts; hood, scarlet cloth, lined with yellow silk.

Doctor of Music.—The same gown as Masters of Arts; hood, scarlet cloth, lined with pale mauve silk.

Doctor of Philosophy.—The same gown as Masters of Arts; hood, scarlet cloth, lined with pale green silk.

Doctor of Civil Law.—The same gown as Masters of Arts; hood, scarlet cloth, lined with French grey silk.

Doctors of Laws, Doctors of Civil Law, Doctors of Literature, Doctors of Science, Doctors of Philosophy and Doctors of Music shall be entitled to wear for full dress a robe of scarlet cloth (similar in pattern to that of the Cambridge LL.D.) faced with silk of the same colour as the lining of their respective hoods.

All hoods shall be in pattern similar to that of the Masters of Arts of Cambridge University.

Undergraduates and graduates shall wear the ordinary black trencher with black tassel, but Doctors of Laws, Doctors of Civil Law, Doctors of Literature, Doctors of Science, Doctors of Philosophy and Doctors of Music shall wear for full dress a black velvet hat with gold cord, similar to that worn by Doctors of Laws of Cambridge University.

Samples of the colours of the linings of all hoods shall be kept for inspection in the office of the Registrar.

FACULTY OF ARTS.

COURSES FOR THE DEGREE OF B.A.

After passing the matriculation examination, an undergraduate, in order to obtain the degree of B.A. or B.Sc., is required to attend regularly the appointed courses of lectures for four years. (Undergraduates are arranged in years, from first to fourth, according to their academic standing.) The conditions of passing into the last three years of the undergraduate course are stated on page 102.

I. ORDINARY COURSE FOR THE DEGREE OF B.A.*

First Year.

Greek, 1 *or* 2, *or* Latin, 1.
English, 1A, 1B and History, 1.
Mathematics, 1—Algebra, Geometry and Trigonometry.
Latin, 1, *or* Greek, 1 *or* 2, *or* French, 1, 2, *or* German, 1 *or* 2, *or* Spanish.
Physics, 1.

Details of the work to be done in each subject are given on pages 107 to 162.

French cannot be taken as a qualifying option in the first year, except by students who have passed the matriculation examination in this subject.

German may be taken instead of trigonometry, in addition to two other foreign languages, by students who intend to read for modern language or English honours. This option will, however, be granted only on the recommendation of the departments concerned.

Students in the first year, who are taking Latin and Greek, with a view to reading for honours, may, on the recommendation of the Classical Department, substitute a modern language for physics.

*For regulations concerning physical education for undergraduate women students, see p. 341 and the Royal Victoria College Announcement. Reports of attendance in physical education will be regularly sent to the Faculty.

An additional language may be taken as an extra subject in the first two years, if the permission of the Advisory Committee has been obtained at the beginning of the session. Credit will be given for it on application.

First year students are under the immediate direction of an advisory committee, consisting of members of the staff who are engaged in their instruction. A system of supplementary tutorial teaching is now in operation in this year.

For regulations regarding advancement to the second year, see page 102.

Advanced Courses.—A student qualified to take work of a more advanced character than the ordinary work of the first year in any subject, shall with the consent of the B.A. Advisory Committee, take such advanced work in that subject as the department concerned may recommend, or he may substitute another ordinary subject for the subject in question. This regulation applies only to students whose qualifications are of exceptional character.

Students taking the work of advanced courses may be excused from the work of the corresponding ordinary courses, on the recommendation of the professor. No exemptions from other subjects will be granted to students in advanced courses.

An outline of the first year course for the Diploma of Commerce will be found on page 165.

Second Year.

English Composition, 2B.
Latin, 2, *or* Greek, 3.
and *three* of the following:
Greek, 2 or 2B, *or* Latin, 2.
English, 2A.
French, 3, 4.
German, 3.
Semitic Languages, A (1) and B.
Psychology and Logic, 1A and 1B.
Economics, 1 and History, 2.
Mathematics, 2.
Elementary Biology (Zoology), 1 and Botany, 2.
Chemistry, 1
Physics, 2 —only for students taking the advanced course in Mathematics.

Details of the work to be done in each subject are given on pages 107 to 162.

Advanced courses will be offered in the second year as in the first.

Students taking an advanced course may be excused from the work of the corresponding ordinary course, on the recommendation of the professor. An exemption from any one of the subjects specified above, except English composition, may be granted to honour students in mathematics who take both the ordinary and the advanced course in mathematics, but to no others.

An outline of the second year course for the Diploma of Commerce will be found on page 166.

For regulations regarding advancement to the third year, see page 102.

Third and Fourth Years.

Language and Literature	History, Philosophy and Law.	Science.
English, 3A, 3B, 4A, 4B and 3C and 4C.	**Philosophy 2, 5 or 7, and Psychology 9.**	**Mathematics, 3.**
Latin, 3.	**History.**	**Mechanics, 7, and Astronomy, 4. (Two half courses).**
Greek, 3.	†Economics, 2.	**Physics: Sound, Light, Heat (full course), 3.**
Sanskrit, 1A, 1B.	**Political Science, 3.**	Electricity and Magnetism (full course), 4.
Comparative Philology (half course) A, B.	**Education, 1, 2, 3, 6 (half courses).**	**Chemistry, 2, 3, 4; 5, 6; *or* 7, 8.**
French, 5.	**Constitutional Law (half course).**	**Geology, 1.**
German, 4.	**Roman Law.**	**Zoology, 2.**
Italian, in alternate years.		**Botany, 2, 3.**
Semitic Languages, A (2), A (3) and C.		***Physiology.**
Anglo-Saxon, 5.		***Anatomy.**

Courses in certain Military subjects (of which Military History must be one) may be taken as an optional half-course (44 lectures) in either the third or the fourth year. For details see page 346.

* These courses in the Faculty of Medicine are accepted as the equivalent of ordinary courses in the Faculty of Arts in the case of double course students in Arts and Medicine, but not otherwise.

† Except with the permission of the instructor, this subject can be selected only by students who have studied it in the second year.

Details of the work to be done in each subject are given on pages 107 to 162.

From the above divisions six courses are to be selected by each student in the third and fourth years, three in each year. Each will be studied in lecture courses extending over not more than four hours per week, with collateral reading, and, in the case of the science subjects, laboratory work. One subject chosen in the third year *must* be continued by every student in his fourth year (political science, 3, will be accepted as a continuation of economics, 2, and *vice versa*); two subjects *may* be continued if application to that effect be granted by the Faculty or the Advisory Committee of the Faculty. Of the whole six courses, one *must* and three *may* be chosen by all candidates from the list of subjects included under the head of Science, except when chemistry or biology has been selected as an option in the second year, in which case no science subject need be taken. Lectures in honour courses are open to candidates for the ordinary degree in the third and fourth years, and may be substituted by them for an equivalent amount of the work prescribed for that degree in the proper year.

In addition to the six courses, a course of one hour a week in English composition (3C, 4C) must be taken by every candidate for the ordinary B.A. degree in the third and fourth years, and also by honour students in English.

For an ordinary B.A. degree of the first class, a candidate must obtain not only the required aggregate of marks (viz., three-fourths of the maximum), but also first class standing in three of his subjects, and not less than second class in any subject.

For arrangements whereby a student can take the course in Arts and Applied Science or Law in six years, or Arts and Medicine in seven years, see pages 103 to 106.

II. HONOUR COURSES FOR THE DEGREE OF B.A.

Honours of first, second and third rank will be awarded to successful candidates in any honour course established by the

Faculty, provided they have passed creditably the regular examinations in all the subjects proper to their year.

A student proposing to read for an honour course:—

(1) Must satisfy the Department of his qualifications to proceed with the subject or subjects in question;

(2) Must, while attending lectures, make progress satisfactory to the Department. In case his progress is not satisfactory he may be notified by the Faculty to discontinue attendance.

Students who wish to graduate with honours in any subject are strongly recommended to take the advanced courses in these subjects in the first and second years, where such are provided.

A candidate for honours must take the ordinary course in the subject in which he is reading for honours, but where the honour course corresponds to two ordinary subjects, a candidate may, at the discretion of the department, be exempted from attendance on lectures in these ordinary subjects for a number of hours not exceeding four weekly. In addition to the ordinary subject specified above, he is required to take a second ordinary subject, which may be determined by the department in which he is a candidate for honours. The Faculty may, on the recommendation of the department, exempt any student from the obligation to take a second ordinary subject.

A student who desires to be a candidate for B.A. honours must have taken at least second rank honours in the third year. In that case he shall be required to take only one subject in his ordinary course, viz., that in which he is reading for honours. A candidate, however, who obtains third rank honours at the B.A. examinations, will not be allowed credit at the end of the session for the exemption from other ordinary subjects, unless the examiners certify that his knowledge of the whole honour course is sufficient to justify it.

Honour lectures are open (1) to all partial students who can satisfy the professor of their fitness to proceed with the work of the course (such students will not be ranked with

undergraduates in the examination lists); and (2) to candidates for the ordinary degree in the third and fourth years, who may substitute them for an equivalent amount of the work prescribed for that degree in the proper year.

No student is allowed to attend two honour courses without the special permission of the Faculty.

The honour courses offered are as follows:—

Classics.
Latin and English.
Latin and French.
Latin and German.
Greek and English.
English.
English and French.
English and German.
Modern Languages.
Semitic Languages.
Greek and Hebrew.
Philosophy and Psychology.
Economics and Political Science.
History.
History and English.
Mathematics and Physics.
Chemistry.
Geology and Mineralogy.
Biology.

Details of the work to be done in the above courses are given on pages 107 to 162.

III. HONOUR COURSES FOR SPECIALISTS IN ONTARIO.

A number of courses, leading to a degree in honours in McGill University, and qualifying for specialists' standing in the Province of Ontario, have been accepted by the Education Department of that province. Full details of these courses may be obtained on application to the Dean of the Faculty of Arts. The provincial regulation as to specialists' standing in Ontario is as follows:—

"51. (1) Any person who obtains a degree in Arts in the honour department of mathematics, science, classics, English and history, moderns and history, or French and German, as specified in the calendar of any university in Canada and accepted by the Education Department, who has graduated with at least second class honours (or 66 per cent., in each subject of such honour department) and who has been in actual attendance in such department at a university for not less than two academic years, shall be entitled to the non-professional qualification of a specialist in such department."

Graduates of McGill University who, having taken any of these courses, have obtained the necessary standing in honours, as stated in the foregoing regulation, will, on attending such courses and passing such examinations in subjects relating to the art of teaching and school management as are prescribed by the Department of Education of the Province of Ontario, be qualified as specialists in that province. Undergraduates will not be permitted to substitute these courses for those of the regular McGill curriculum, except as a whole.

IV. ORDINARY AND HONOUR COURSES FOR THE DEGREE OF B. Sc. (ARTS).

The ordinary B.Sc. course in Arts has been arranged to give students a thorough training, suitable for those wishing to study pure science as a preliminary to entering a business or profession or to teaching science in schools, or simply as part of a general scientific education. The ordinary course, therefore, involves the study of several sciences up to a moderately high university standard and does not include a highly detailed specialised study of any one science, such as is necessary before scientific research work or university teaching can be profitably undertaken.

Students wishing to specialise with a view to research work and university teaching should take an honour B.Sc. course.

First Year.

(1). **English, 1A, 1B.**
(2). **German (Beginners).**
(3). **Mathematics 1.**
(4). **Physics 1, and practical work.**
(5). **Chemistry 1, and practical work.**
(6). **French Reading (half course.)**

Special arrangements will be made for students who have passed the matriculation examination in German.

Details of the work in the above subjects will be found on pages 107 to 162.

Second, Third and Fourth Years.

At the beginning of the second year, students may elect to take either an ordinary or an honour course. Each student electing to take an ordinary course will be required to select three subjects from the following list and to take the theoretical and practical ordinary degree courses provided in each of them for each of the three years. In addition, he must take English composition in his second year, unless exempted by the professor of English:—

(1) Mathematics, (2) physics, (3) chemistry, (4) botany, (5) zoology, (6) geology with mineralogy.

Ordinary B.Sc. students who obtain 75% of the total marks during the three years will be awarded a first class. Extra courses in additional subjects may be taken only on the recommendation of the B.Sc. Committee.

A student proposing to read for an honour course must select one principal subject from the following list, namely, mathematics, physics, chemistry, zoology, botany, and must satisfy the department concerned of his qualifications to proceed with the study of it.* He will be required to take the lectures and practical work provided for honour students in that subject during each of the three years, and, in addition, such other courses on allied subjects as shall be directed by the professor of the principal subject. All students reading for honours will be required to take a course in scientific German during their second year.

The honour courses include a detailed study of the higher branches of the principal subject in all its aspects, including the methods of research work, both practical and theoretical, and an honour course in all cases will involve a greater total amount of work than the total amount in an ordinary course, although the ordinary course involves a study of three subjects. Students, therefore, should seek advice and exercise due caution before electing to take an honour course.

Students taking an honour course, if sufficiently advanced, may be allowed by the professor of their principal subject to

* Honour courses in other sciences may be arranged on application to the Dean, who will communicate with the Advisory Committee.

devote a portion of their time to research work, and the results of this work may be submitted to the examiners at the final examination and shall be taken into account in deciding the class to be awarded to the candidate. In no case, however, shall any such research work be taken in lieu of such competent general knowledge of the principal subject as should be possessed by a candidate for honours. First, second and third class honours will be awarded, and the whole of the work done by the student during the three years shall be taken into account in deciding his class. No student shall obtain a first class who has not obtained 70% of the total marks during the three years, and no student shall obtain a second class who has not obtained 60% of the total marks, and no student a third class who has not obtained 50%. In any case, no student shall be awarded honours who, in the opinion of the professor of his principal subject, does not possess such a competent knowledge of his subject as ought to be acquired by an honour student.

Candidates for honours who fail may be excused such part of an ordinary B.Sc. course as the work they have done is clearly equivalent to. Candidates for honours who, in the opinion of the professor of their principal subject, are not making satisfactory progress may be required to discontinue their honour course and may be excused such part of an ordinary course as the work they have done is equivalent to.

Details of the honour course in each subject will be found in the section of the Calendar dealing with the courses in that subject.

The honour courses should be adapted to the needs of particular students. The following are typical proposed honour courses in chemistry and physics:

CHEMISTRY.

Second Year.—Chemistry, 3 lectures and 9 hours practical.
Physics, 2 lectures and 3 hours practical.
Biology or geology, or mineralogy, 2 lectures and 6 hours practical.

Third Year.—Chemistry, 5 lectures and 12 hours practical.
Physics, 2 lectures and 8 hours practical.
Mathematics (half-course on calculus, etc.), 1 hour.

Fourth Year.—Chemistry, 3 lectures and 18 hours practical.
Optional course on thermodynamics.

PHYSICS.

Second Year.—Physics, 4 lectures and 6 hours practical.
Dynamics, 2 lectures.
Mathematics, 4 lectures.
Physical Chemistry (half-coures), 2 lectures.

Third Year.—Physics, 5 lectures and 5 hours practical.
Mathematics, 2 hours.
Dynamics, 2 hours.
Physical Chemistry, 2 hours and 4 practical.

Fourth Year.—Physics, 6 hours lectures and 12 practical.
Mathematics, 2 hours.

Suggested course in Physical and Biological Sciences, especially devised for students proceeding to the degree in Medicine or advanced work in Physiology, Biological Chemistry, Pharmacology, etc.

Matriculation.

The requirements for entrance to the Faculty of Arts (or Medicine, if the student intends to proceed to the degree in Medicine).

First Year.

1. **English, 1A, 1B.**
2. **German (Beginners).**
3. **Mathematics, 1.**
4. **Physics 1, and practical work.**
5. **Chemistry 1, and practical work.**
6. **Summer reading in German.**

NOTE: This is the regular work required of all students in the first year of the B.Sc. course and calls for 15 hours lectures and 9 hours laboratory work, a total of 24 hours.

Second Year.

1. **English Composition.**
2. **Physics, courses 1 and 2, as in Applied Science.**
3. **Elementary Biology, Embroyology, Histology and Bacteriology.**
4. **Quantitative and Qualitative analysis.**

NOTE: This calls for 9½ hours lectures and 22 laboratory hours, a total of 31½ hours per week.

Third Year.

1. **Organic Chemistry.**
2. **Advanced Biology, including advanced technique of Histology and Bacteriology.**
3. **Physical Chemistry as in third year Chemistry.**
4. **Mammalian Osteology and Anatomy.**

NOTE: This calls for 7½ hours lectures and about 22 hours laboratory work, or 29½ hours per week.

Fourth Year.

1. **Physical Chemistry 11, as in Fourth Year Chemistry.**
2. **Anatomy, or equivalent advanced Biology.**
3. **Physiology.**
4. **Biological Chemistry.**

NOTE: This course calls for about 9½ hours lectures and 22 hours laboratory work, or 31½ hours per week.

A graduate having taken the above course is qualified to enter the third year of the course in Medicine.

EXAMINATIONS IN ARTS.

1. There are two examinations in each year, viz., at Christmas and at the end of the session. Successful students are arranged in three classes at the sessional examinations. Those who obtain 75 per cent. and over are placed in the first class, those who have between 60 and 75 per cent. in the second class, and those with from 40 to 60 per cent. in the third class.

Christmas examinations will be held in all the subjects of the first and second years, and are obligatory on all undergraduates, and also on all partial students of the first year, unless they have been specially exempted. Partial students of the first year, who fail in the Christmas examinations, will be allowed to continue their course only by obtaining the

consent of the Dean and the instructor concerned. *Undergraduates and conditioned undergraduates of the first year who fail in more than three subjects at the Christmas examinations will be allowed to attend not more than three courses after Christmas as partial students, for each of which they must obtain the permission of the Dean.* Twenty-five per cent. of the marks given for the sessional work in each subject will be assigned to the Christmas examinations. Students prevented by illness from attending the Christmas examinations will, on presenting a medical certificate, be given sessional standing on the results of the April examinations, if they have obtained an average of 40 per cent. at the two mid-term examinations, or (where no mid-term examinations are given) an average of 40 per cent. in class exercises. Christmas examinations in the third and fourth years may be held at the option of the professors. When held, the same value will be assigned to them as in the case of the first and second years.

2. The following are the regulations for advancement to the second, third and fourth years of the undergraduate course and are subject to the condition that a student shall not be allowed to continue a subject of the preceding year in which he has not made good his standing, except in the case of compulsory subjects in the second year.

Advancement to the Second Year.—A student who has failed to complete one of the ordinary courses of the first year may enter the second year without special permission of the Faculty.

Advancement to the Third Year.—A student may be allowed to proceed to the third year with one subject uncompleted if that subject belongs to the second year.

Advancement to the Fourth Year.—A student may be allowed to proceed to the fourth year with one subject uncompleted if that subject belongs to the third year.

Repeating Year.—By special permission of the Faculty, a student who is required to repeat his year may, on application in writing:—

(a) be exempted from attending lectures and passing examinations in the subjects in which he has already passed.

(b) be permitted to take, in addition to the subjects in which he has failed, one of the subjects of the following year of his course.

N.B.—The choice of subjects must involve no conflict of hours as printed in the time-table.

3. Examinations supplemental to the sessional examinations will be held in September, simultaneously with the matriculation examinations. The time for each supplemental examination will be fixed by the Faculty; the examination will not be granted at any other time, except by special permission of the Faculty, and on payment of a fee of $5.

4. A list of those to whom the Faculty has granted supplemental examinations in the following September will be published after the sessional examinations.

DOUBLE COURSES.

ARTS AND APPLIED SCIENCE.

Students who wish to obtain the degrees of B.A. and B.Sc. (Applied Science) in six years, will spend the first three years in Arts before attending any regular classes in Applied Science, except the *summer classes* referred to below. The student will then enter the Faculty of Applied Science and devote the remaining three years entirely to the work of that Faculty. The special *summer courses* mentioned are necessary in order to overtake the work in descriptive geometry, drawing and shopwork, which form part of the regular work of the first year in Applied Science. This work must be taken in two periods of one month each (in the month of September), at the close of the regular work of the first and second years in the Faculty of Arts, and must not be taken during the regular session in any of the three years spent in that Faculty.

Students who intend to take the double course in Arts and Applied Science must notify the Dean of the Faculty of Applied Science to this effect, at or before the close of their

first year in Arts (May 1st), and must (before the first of September following) pay the fee of $50.00 to the Bursar, for the first of their summer schools.

The subjects which they are required to take each year in the Faculty of Arts are as follows:—

First Year.

The curriculum as laid down for the B.A. degree in this year, except that a modern language *must* be taken. It is recommended that advanced mathematics be taken instead of the ordinary course in this subject.

Second Year.

1. **English Composition.**
2. **Latin.**
3. **Mathematics (algebra, geometry and spherical trigonometry, supplemented by the course on statics and dynamics). Students who have taken advanced mathematics in the first year may substitute advanced mathematics of the second year for the ordinary mathematics of that year, but they must take spherical trigonometry, statics and dynamics.**
4. **French or German.**
5. **The modern language not selected under No. 4 (if studied in the first year), *or* English *or* Economics and History.**

Third Year.

1. **English Composition.**
2. **Physics.**
3. Any two of the following:—
   English, Latin, French, German, Philosophy, History, Economics (if taken in the second year), Political Science.

The degree of B.A. will be conferred on double course students in Arts and Applied Science on the completion of the prescribed work in Arts and the work of the second year in Applied Science.

ARTS AND MEDICINE AND ARTS AND DENTISTRY.

Students who wish to obtain the degrees of B.A. and M.D., in seven years, or of B.A. and D.D.S., in six years, will take three years in the Faculty of Arts and during the remaining four, or three, years (as the case may be), will work entirely in the Faculty of Medicine. The courses which such students are required to take in the Faculty of Arts are as follows:—

First Year.

The curriculum as laid down for the B.A. degree in this year, except that a modern language *must* be taken.

Second Year.

English Composition.
Greek or Latin (the language taken in the first year).
French or German (the language taken in the first year).
Chemistry (Arts).
Biology, Embryology and Bacteriology (Medicine).

Third Year.

English Composition.
Anatomy.
Political Science.
English Literature.
Histology.
Organic and Biological Chemistry.

The degree of B.A. will be conferred on double course students in Arts and Medicine on the completion of the prescribed work in Arts and of the second year in Medicine.

ARTS AND LAW.

1. Undergraduates who desire to qualify for the degrees of B.A. and B.C.L. in six years shall include French among the subjects studied in each of the first two years of their course.

2. They shall take:—

I. *In the Third Year.*

(*a*) French.
(*b*) Political Science.
(*c*) One other of the courses of the Arts curriculum which shall be selected from those under the heading "Science" in every case in which the second year course has not included either chemistry or biology.
(*d*) Either one or two hours weekly in English composition.*

* NOTE.—Students are recommended to distribute their English work over two years.

II. *In the Fourth Year*:—

(*a*) Economics.
(*b*) Constitutional law and history.†
(*c*) Roman Law.
(*d*) One hour weekly in English composition, if only one has been taken in the third year.*

In the case of students who propose to study Law, but are not subject to the statutory requirement of office attendance during the three years of their Law course, the Faculty may, on special application, in individual cases, make such arrangements as to permit of the completion of the double course in five years.

ARTS AND THEOLOGY.

1. The Faculty will make formal reports to the governing body of the Theological College which such students may attend as to:—(*a*) their conduct and attendance on the classes of the Faculty, (*b*) their standing in the several examinations; such reports to be furnished after the examinations, if called for.

2. Students who are pursuing a double course in Arts and Divinity (six years at least) will take in the third and fourth years the courses which constitute the ordinary curriculum in Arts, less a half course in each of these years, or a whole course in either.

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† NOTE.—The half course in constitutional history being given in alternate years only, students shall take it in their third year when it is offered in that year.

* NOTE.—Students are recommended to distribute their English work over two years.

COURSES OF LECTURES IN ARTS.

DEPARTMENT OF CLASSICS.

PROFESSORS:—{ W. PETERSON. JOHN MACNAUGHTON.

ASSOCIATE PROFESSORS:—{ S. B. SLACK. H. J. ROSE.

LECTURER:—A. M. THOMPSON.

SESSIONAL LECTURER AND TUTOR (Royal Victoria College):—ELIZABETH A. IRWIN.

Greek.

ORDINARY COURSES.

All students taking Greek are expected to provide themselves with a grammar, a Greek-English dictionary, and an Atlas of ancient geography. The following are recommended:—

Allen's Elementary Greek Grammar; Liddell and Scott's Greek Lexicon (abridged, or intermediate); Kiepert's Atlas Antiquus, or Putzger's Historical Atlas.

First Year.

1. Lectures, four hours a week.

White's First Greek Book (Ginn & Company). Students who have not yet begun the study of Greek may take this course. It will not be necessary therefore to have passed the matriculation examination in Greek. Those students, who have shown that they are capable of more advanced work, will take the course prescribed for students of the second year. For students of the first and second years who possess the requisite attainments, a special advanced class will be formed.

N.B. Students who do not pass a satisfactory examination in the work of the first year, will be required to attend a tutorial class during May and June, unless exempted for some special reason.

Prof. Rose (before Christmas), Dr. Thompson (after Christmas).

Advanced Section.—Thucydides, Book II (Marchant, Macmillan).

Second Year.

2. Lectures, four hours a week.

AUTHORS: *Summer Reading.*—Greek History, 479 to 403 B.C. Books recommended, Bury, History of Greece (Macmillan, 8s. 6d. edition), chs. VIII to XI; Abbott, Pericles and the Golden Age of Athens (Putnam). *Lectures.*—Sophocles, Antigone (Wells, Bell's Intermediate Series), Peacock and Bell's Passages for Greek Translation, pp. 21-35 (Macmillan's Elementary Classics).

COMPOSITION: Abbott's Arnold's Greek Prose Composition (Longmans).

TRANSLATION AT SIGHT: Peacock and Bell's Passages as above.

2B. Advanced students will take the whole or a portion of the ordinary course, together with the additional work stated above. (See first year, Advanced Section).

Prof. Slack (before Christmas), Dr. Thompson (after Christmas).

Third and Fourth Years.

3. Lectures, four hours a week.

AUTHORS: *Summer Reading.*—Greek History from 404-323 B.C. (Bury's History of Greece, chs. 12 to 18 inclusive, Macmillan 8s. 6d. edition). *Lectures.*—Plato's Phaedo (Burnet, Clarendon Press), Apollonius Rhodius III (Seaton, Clarendon Press Texts). The lectures will include two courses of twelve hours each; these courses will deal with some period of Greek history or literature or with some aspect of Greek life or thought.

COMPOSITION: Sidgwick's Greek Prose Composition (Longmans).

TRANSLATION AT SIGHT: Tod and Longworth's Passages for Unseen Translation, Latin and Greek (Longmans).

Dr. Thompson (before Christmas), Prof. Rose (after Christmas).

Honour Courses.

Third and Fourth Years.

4. Honour students of the third and fourth years will take the work of the ordinary course, together with additional work, and will attend the ordinary lectures (except those from which they may be exempted under the regulation on page 95), together with four hours a week of additional lectures. They are recommended to study during the summer vacation the books set down under the head of Private Readings. The additional work for 1913-14 will be as follows:—

Authors: *Private Readings*, third and fourth years.—Isocrates, Panegyricus (Sandys, Rivingtons); Homer, Odyssey Bk. IX (Edwards, Pitt Press). Fourth year only.—Euripides, Orestes (Wedd, Pitt Press). *Lectures.*—Plato, Gorgias (Thompson, Bell); Aeschylus, Choephoroi and Eumenides (Sidgwick, Clarendon Press).

Composition: Passages to be selected.

Translation at Sight: Fox and Bromley, Models and Exercises in Unseen Translation (Clarendon Press).

Prof. Macnaughton.

Comparative Philology: 48 lectures (see page 114), which will be reckoned as forming part of the third and fourth year honour course in Greek and Latin together. Book recommended, Max Niedermann, Précis de phonétique historique du latin, Paris, libr. Klincksieck.

British School of Classical Studies in Athens.

McGill University is a contributor to the support of this School, which affords facilities for archæological and classical investigation in Greece. Graduates in Arts of McGill University are accordingly entitled to special privileges and advantages as regards tuition in the School.

Latin.

Ordinary Courses.

All students taking Latin are expected to provide themselves with a grammar, a Latin-English dictionary, and an Atlas of Ancient Geography. The following are recommended:—New Latin Grammar by Sonnenschein (Clarendon Press 1912; N.B. Note the exact title); Lewis' School Dictionary, *or* White's Junior Students' Latin-English Dictionary; Kiepert's Atlas Antiquus, *or* Putzger's Historical Atlas.

First Year.

1. Lectures, four hours a week.

Authors:—Roman Life Reader, pp. 20-63 (Winbolt and Merk, Constable); Virgil, Georgic I (Page, Macmillan).

Prof. Macnaughton.

Composition: Latin Composition (Mitchell, Macmillan's Canadian School Series).

Translation at Sight:—Rivingtons' Class Books of Latin Unseens, Book IV.

Roman History: Outlines, to 133 B.C. Book recommended, Botsford, History of Rome (Macmillan), chs. I to VI. N.B. All students will be examined in this subject.

Prof. Rose and Dr. Thompson (McGill College), Prof. Macnaughton (R.V.C.).

Grammar: New Latin Grammar by Sonnenschein (Clarendon Press, 1912; Note the exact title), pp. 178-211.

Advanced Section. Tacitus, Dialogus (Gudeman, smaller edition, Allyn & Bacon); Ovid, Tristia I (Owen, Clarendon Press). Prose and Unseen Translation. Two hours a week. Prof. Rose.

Second Year.

2. Lectures, four hours a week.

Authors: *Summer Reading*:—Roman History: Outlines, from 133 B.C. to 337 A.D. Book recommended, Botsford, History of Rome (Macmillan), chs. VII to XII. N.B. All students will be examined in this subject. *Lectures.*—Ovid,

Elegiac Selections (Smith, Bell's Illustrated Classics); Seneca, p. 101 to the end (Select Letters, Summers, Macmillan); Horace, Odes III (Page, Macmillan).

COMPOSITION: Latin Composition based on Cæsar (Mitchell, Macmillan's Canadian School Series).

TRANSLATION AT SIGHT: Dalton, Latin Translation for Public School Scholarships (Macmillan).

Dr. Thompson and Prof. Rose (McGill College), Prof. Slack (R.V.C.).

GRAMMAR: New Latin Grammar by Sonnenschein (Clarendon Press, 1912; N.B. Note the exact title), pages 123-178.

Advanced Section. As in first year.

Third and Fourth Years.

3. Lectures, four hours a week.

AUTHORS: *Summer Reading.*—Strachan-Davidson's Cicero (Putnam). *Lectures*:—Cicero, Fifth Verrine Oration (Peterson, Oxford Classical Texts); Lucretius, Book V (Duff, Cambridge University Press); Horace, De Arte Poetica (Horace, Text only, Macleane, George Bell and Sons).

Two courses of twelve lectures each on two of the following four subjects:—

(1) Constantine the Great (Constantine the Great, by Firth; Heroes of the Nations, Putnam's Sons).

(2) Roman Literature down to Ovid (Mackail's Latin Literature, John Murray), pp. 1-168.

(3) Ancient Philosophy in its later phases (Stoicism by St. George Stock, Constable).

(4) Cæsar in Gaul and Britain (Ancient Britain and the Invasions of Julius Cæsar, by Rice Holmes, Clarendon Press and Cæsar's Conquest of Gaul, by Rice Holmes, Clarendon Press, 24s.).

N.B.—In each case the books named in brackets are suggested as a useful auxiliary to the lectures. It will be left to the lecturer to decide at the beginning of the session what portions of these books, if any, will be studied in connection with the two courses.

COMPOSITION: (Third Year):—Bradley's Arnold (Longmans). (Fourth year):—Latin Prose Based on Cæsar (Bryans, Macmillan).

TRANSLATION AT SIGHT: Dalton's Latin Translation for Public School Scholarships (Macmillan).

Prof. Slack.

HONOUR COURSES.

Third and Fourth Years.

4. Honour students of the third and fourth years will take the work of the ordinary course together with additional work, and will attend the ordinary lectures (except those from which they may be exempted under the regulation on p. 95) together with four hours a week of additional lectures. They are recommended to study during the summer vacation the books set down under the head of Private Readings. The additional work for 1913-14 will be as follows:—

AUTHORS: *Private Readings* (third and fourth years): Terence, Andria (Freeman and Sloman, Clarendon Press). Fourth year only, Virgil, Georgic I (Page, Macmillan) and Georgic IV (Page, Macmillan).

Lectures: Livy, Book I (Edwards, Pitt Press, 1912); Cicero, de Finibus, Book V (C. F. W. Müller's Edition, Teubner, Part 4, Vol. 1); Horace, Epistles I and II (Wilkins, Macmillan).

COMPOSITION: Nixon's Prose Extracts for Translation into English and Latin (Nixon, Macmillan).

TRANSLATION AT SIGHT: Fox and Bromley, Models and Exercises in Unseen Translation (Clarendon Press).

Prof. Rose (before Christmas), Prof. Slack (after Christmas).

COMPARATIVE PHILOLOGY: 48 lectures (see page 114) which will be reckoned as forming part of the third and fourth year honour course in Latin and Greek together. Book recommended, see page 109.

BRITISH SCHOOL OF CLASSICAL STUDIES AT ROME.

McGill University is a contributor to the support of this School, which affords facilities for archæological and classical investigation at Rome. Graduates in Arts of McGill University are accordingly entitled to special advantages as regards tuition in the School.

Sanskrit.

The two courses in Sanskrit are primarily intended for students who have passed the second year sessional examination, but permission may in certain other cases be obtained to attend the elementary course.

1. A. For beginners. The work mainly consists in the mastering of the elements of Sanskrit grammar with such composition as tends to fix in the mind the knowledge thus acquired. Etymological references will be frequently made and comparisons suggested in order to make the language interesting and give it an educational value in spite of the elementary nature of the course. This course counts as a half course qualifying for the degree, and it is especially recommended to students attending the half-course in Comparative Philology.

Two hours a week.

1. B. For those students who have already passed through Course A or its equivalent in Sanskrit preparation. One hour per week is devoted to lectures on Indian literature, commencing with the Post-Vedic period; two hours are devoted to reading selections; and one hour to grammar and composition, bearing especially on the texts read. Course B counts as one full course to the final; courses A and B together, one and one-half, the student taking up Course B not being debarred thereby from repeating a course in another department.

Four hours a week.

Books required:—Perry, Sanskrit Primer; Whitney's Sanskrit Grammar; Lanman's Sanskrit Reader (Ginn & Co.).

For reference: Sanskrit Literature by A. A. Macdonnell (Heinemann).

Summer Readings.—A course of summer readings will be suggested according to individual needs. During the months of May and June the lecturer will be glad to give his personal supervision to students of Sanskrit and is prepared to give lectures if due notice is given.

Comparative Philology.

LECTURER:—S. B. SLACK.

A. The first part of the course on Comparative Philology will deal with the following subjects:—The history of the science of Comparative Philology; the Indo-Germanic languages and their classification and relation to one another; the primitive home and culture of the so-called Aryan people; the nature of compounds in Indo-Germanic; recent theories about ablaut and its relation to the Indo-Germanic system of accentuation; the importance of ablaut in explaining apparent irregularities of declension and conjugation; external Sandhi in the Indo-Germanic languages; and the influence of analogy and contamination in the formation of words. The lectures will then go on to discuss the various sounds of the primitive Indo-Germanic language, and the development of those sounds in the various languages of the Indo-Germanic family.

B. After Christmas, special attention will be devoted to the comparative grammar of Greek and Latin. This part of the course will be especially useful to classical honour students. At the same time students who desire to make a special study of Comparative Philology are recommended to take this course in addition to course A mentioned above.

Two hours a week.

DEPARTMENT OF ENGLISH.

PROFESSOR:—CHAS. E. MOYSE.
PROFESSOR OF COMPARATIVE LITERATURE AND ASSOCIATE PROFESSOR OF ENGLISH:—P. T. LAFLEUR.
ASSISTANT PROFESSORS:—SUSAN E. CAMERON. CYRUS MACMILLAN.
LECTURER:—G. W. LATHAM.

ORDINARY COURSES.

First Year.

1. A. ENGLISH COMPOSITION.—The course will be of a practical character. Regular essays are required of all students. One hour a week. Men, Monday, 12; women, Monday, 9 a.m. (R.V.C.). Mr. Latham.

1. B. ENGLISH LITERATURE.—A general course down to the French Revolution. Men, Friday, 12; women, Wednesday, 9 a.m. (R.V.C.). The second hour to be arranged. Two hours a week. Dr. Moyse.

1. C. HISTORY.—For course, see under History, page 139.

Second Year.

2. A. LITERATURE.—*English prose from Bacon to Burke.* Three hours a week before Christmas, with the following special readings:—Bacon: Essays of Truth, of Unity in Religion, of Revenge, of Atheism, of Travel, of Friendship, of Plantations, of Building, of Studies; Browne: Religio Medici; Milton: Areopagitica; Defoe: A Journal of the Plague Year; Swift: A Tale of a Tub; Steele and Addison: The Tatler and the Spectator, *passim*; Goldsmith: The Citizen of the World. Craik's Prose Specimen and Chambers's Cyclopedia of English literature (new ed.) may also be used.

English Prose in the Nineteenth Century. Three hours a week after Christmas. The course is a continuation of that followed in the first term and will include representative prose writers from Jeffrey to Leslie Stephen. Readings—Lamb: Essays of Elia; DeQuincy: The English Mail-Coach, Levana and the Three Ladies of Sorrow, A Spanish Military Nun;

Carlyle: Essays on Burns, Heroes and Hero-Worship, other selections, to be specified; Ruskin: Seasame and Lilies; Arnold: Essays in Criticism, Second Series. Three hours a week. Men, Tuesday, Wednesday, Thursday, 9 a.m.; women, (R.V.C.) Monday, Thursday, Friday, 3 p.m. Prof. Lafleur, Miss Cameron and Dr. Macmillan.

2. B. COMPOSITION.—Continuation of 1 A.

Fortnightly essays will be required and will be taken into account in determining the standing of students at the end of the session. One hour per week. Men, Monday, 9 a.m.; women, Tuesday, 3 p.m. Dr. Macmillan.

This course is obligatory on all second year students.

Third Year.

3. A. ENGLISH LITERATURE.—Shakspere.—This course will begin with a review of the early history of the English drama, and of the conditions which led to its development in the time of Elizabeth. The advances made by the earlier Elizabethan dramatists will be noted, and Shakspere's methods illustrated by a comparative study of A Midsummer Night's Dream, Romeo and Juliet, Henry V, As You Like It, Hamlet, King Lear, Macbeth, and The Tempest; the relation of these plays to their sources will also be considered. Students are recommended to read as many of Shakspere's plays as they can, and to give special attention to those mentioned above. Books of reference will be named from time to time. Two hours a week. Monday and Thursday, 4 p.m. Dr. Moyse.

In connection with 3A a special course of lectures will be delivered by Dr. Macmillan on Shakspere's plays. This course is compulsory on all students who take 3A. One hour a week.

(3A together with this course, is reckoned as a half-course.)

Books of Reference and Authorities:—These will be given at the beginning of the course. Among them may be mentioned, "Growth of the Drama," by G. E. and W. H. Hadow (Oxford Treasury of English Lit., vol. II; Clarendon Press).

[The editions of separate plays published by Dent (Temple Shakespeare) or Macmillan will be found convenient.]

3. B. POETRY AND THE DRAMA.—England from 1660 to 1789, with special and detailed reference to changes in literary ideals and expression during the period discussed. The lectures will include poets, from Dryden to Crabbe; dramatists, from the writers of heroic plays to Sheridan. Students will be called upon to pay special attention to the following works: Dryden, Absalom and Achitophel; Pope, Selections from the Essay on Man and The Rape of the Lock; Thomson, The Seasons (one book); Cowper, The Task (one book); Crabbe, The Borough (four divisions); Dryden, Essay on Dramatic Poesy; Addison, Cato; Goldsmith, She Stoops to Conquer; Sheridan, The School for Scandal. Two hours a week. Tuesday and Wednesday, 11 a.m. Prof. Lafleur.

3. C. ENGLISH COMPOSITION. — An advanced course on English Composition, including style, methods and principles of literary criticism, treated from the historical point of view, and an introduction to the comparative study of literature in accordance with the most recent results of contemporary thought and research. In connection with this course students will be examined in a course of prescribed readings. Essays at stated periods are required of all. One hour a week. Thursday, 11 a.m. Prof. Lafleur and Dr. Macmillan.

Prof. Lafleur's course in composition is open only to students who take his course in literature.

Books of reference and authorities:—Saintsbury's History of Criticism; Lessing, Sainte-Beuve, Brunetière, Arnold, Ruskin, Worsfold.

3. D. THE FORMS OF PUBLIC ADDRESS, ARGUMENTATION AND DEBATING.—The purpose of this course is, by lectures, class-room work and writing, to study carefully the forms of public address; to provide training in argument and persuasion, and to emphasize the importance of style in public discourse. Each student will draw at least two briefs and will write four manuscripts of at least 2,000 words each, two of which shall be arguments. He will debate at least three

times (after thorough preparation), and will speak several times from the floor.

Regular individual conferences with the instructors are required.

This course is open to students of the third and fourth years and may be substituted for the compulsory English Composition of these years. It may be taken by properly qualified partial students.

Two hours a week. Mr. Latham and Dr. Macmillan.

Fourth Year.

4. A. The Leading Poets of the Nineteenth Century. —The chief aspects of the French Revolution will be considered, and republican feeling in England illustrated chiefly from the works of Wordsworth, Coleridge and Southey. The indirect revolutionary poets Byron and Shelley will then be considered, and their typical poems, together with those of the poets already mentioned, critically examined. The remainder of the course will be given to Scott, Keats [Macmillan], Tennyson [Macmillan], Browning, Matthew Arnold and Swinburne.

The poems which have been selected for private reading will be announced at the commencement of the session. *Text*: Page's British Poets of the Nineteenth Century (Sanborn, Boston) will be found useful. Two hours a week. Tuesday and Friday, 4 p.m. Prof. Lafleur and Miss Cameron.

4. B. The History of English Prose Fiction.—This course covers the period from Richardson to the middle of the nineteenth century, and treats of the various forms successively given to English novels during this time, and the influences that stimulated or otherwise affected such productions. While students are expected to show particular knowledge of English master-pieces in this kind, frequent reference to cognate works by continental writers will also demand some familiarity with contemporary European literature. Portions of the following works will be selected for detailed study and discussion: Richardson, Clarissa; Fielding, Amelia;

Goldsmith, The Vicar of Wakefield; Godwin, Caleb Williams; Walpole, The Castle of Otranto. A general knowledge of leading English fiction of the nineteenth century is desirable, special importance being attached to a good knowledge of the works of Dickens and Thackeray. *Books of reference*:— Raleigh, The English Novel; Dunlop, History of Fiction; Cross, The Development of the English Novel. Two hours a week. Monday and Friday, 11 a.m. Prof. Lafleur.

4. C. THE DRAMA, from Shakspere to the closing of the theatres. The purpose of this course is two-fold—to study Shakspere as a dramatist and to trace the development of the English drama from Shakspere to 1642. The greater number of the plays of Shakspere are read. They are carefully examined to show the debt of Shakspere to his own and earlier times and his growth as a poet and dramatist. The development of the drama is then traced through the plays of Jonson, Dekker, Chapman, Heywood, Beaumont and Fletcher, Middleton, Webster, Ford, Massinger, Shirley and Brome, to the Commonwealth. The course is a continuation of 3A and it is highly desirable, although not required, that students who select 4C should take, or should have taken, 3A. Tuesday and Friday at 12. Dr. Macmillan.

4. D. ENGLISH COMPOSITION.—The statement respecting 3C (page 111) indicates the method and character of this course, which is regarded as a continuation of the course in the third year. One hour a week. Wednesday, 12. Prof. Lafleur and Dr. Macmillan.

4E. See 3D, page 111.

HONOUR COURSES.

Third Year.

In addition to the ordinary work of the third year, honour students will take course 5, together with courses 9, 10, 11, and 13.

5. ENGLISH LANGUAGE.—Three hours a week. Sweet, Anglo-Saxon Reader, Extracts (all the Prose) XX, XXI, XXIII, XXVII; Wright, Primer of the Gothic Language,

The Gospel of St. Mark (Clarendon Press); Wright, Old English Grammar (Oxford University Press). (The use of Streitberg, Gotische Elementarbuch is recommended.) Dr. Moyse. (The examination in Anglo-Saxon will cover the ground stated, even if the work has not been completed in class.)

Fourth Year.

Honour students in the fourth year will select language or literature.

Language students will take the following special courses in addition to 4A, 4B, and 4C:—

6. Anglo-Saxon.—The whole of Béowulf will be read in class and illustrated by notes on origins, philology and textual emendations. *Text Book*: Wyatt's Béowulf (Ginn). Students will read selected portions of other poems for examination. Anglo-Saxon prose will be studied mainly in the translation of Gregory's Pastoral Care and Ælfric's Homilies. Students will be guided in the examination of dialectical texts and referred to important articles in periodical literature dealing with that subject and also with the field of Anglo-Saxon generally.

Two hours per week. Dr. Moyse.

7. Middle English. — The course is intended to give a knowledge of dialectical English and to illustrate the changes the language has undergone. The texts given in Morris's Specimens of Early English, Part I, and Morris and Skeat's Specimens of Early English, Part II, may be regarded as the chief material for study. A list of books of reference and of important monographs will be given at the commencement of the course. Two hours a week. Dr. Moyse.

8. Mœso-Gothic.—The course on Mœso-Gothic is intended to open the way to the comparative study of allied Teutonic languages. Particular attention will be given to the phonological relations of Mœso-Gothic and Anglo-Saxon. *Text-Books*: Wright, Primer of the Gothic language, The Gospel of St. Mark; Ulfilas (Heyne). Dr. Moyse.

Honour students selecting literature will take the following, in addition to the ordinary work of the fourth year, and one hour a week in language (Anglo-Saxon:—Sweet, Anglo-Saxon Reader, Extracts (all the verse):—

9. CHAUCER.—A sketch of Chaucer's characteristics and literary influence. The following works are chosen for special study:—Canterbury Tales: Prologue, Knightes Tale, Nonne Prestes Tale; Parlement of Foules; Hous of Fame [Skeat's Chaucer]; Piers the Plowman (Clarendon Press). Works to be consulted or read: Pollard's Chaucer Primer (Macmillan); Lounsbury, Studies in Chaucer; Jusserand's English Wayfaring Life; Snell, The Fourteenth Century. One hour a week. Mr. Latham.

10. PROSE WRITERS BEFORE DRYDEN.—The main object of the course will be to discuss the chief literary influences visible in the Pre-Restoration writers of English prose and to examine characteristics of style. The subject will be treated chronologically. As the course is largely interpretative and critical, facts of biography will be used only when they illustrate points of moment. Students will read the following works for examination: More, Utopia (Arber's reprint, or Temple Edition); Sidney, Apologie for Poetry (Ed. Cook, Ginn & Co. or Shuckburgh, Cambridge University Press); Lodge, Rosalynd (Newnes, Caxton Series); Bacon, New Atlantis; Earle, Microcosmographie (Temple Ed.); Milton, Areopagitica (Ed. Hales, Clarendon Press).

Two hours a week. Miss Cameron.

11. SPENSER AND MILTON.—This course is intended to show the literary relations of Spenser and Milton to their time, and to treat with special prominence the following works:—Spenser: The Shepheard's Calendar, Mother Hubbard's Tale, Colin Clout's Come Home Again, Faerie Queene (Selections), Fowre Hymnes. Milton: Shorter Poems, Paradise Lost (Selections), Samson Agonistes.

One hour a week. Miss Cameron.

12. COMPARATIVE LITERATURE.—A course of lectures on the influence of English literature upon the Continent of

Europe, chiefly during the eighteenth and nineteenth centuries. The treatment discusses mainly the historical development of ideas, but examines also corresponding modifications regarding literary method and form.

Voltaire, Letters concerning the English Nation; Elton, The Augustan Age; Texte, Jean Jacques Rousseau and the Cosmopolitan Spirit in Literature (tr. Matthews); Brunetière, L'Evolution des Genres. Two hours a week. Prof. Lafleur.

13. COMPARATIVE LITERATURE. — Memoirs and Memoir writers. A course on the best known and most characteristic works in this kind, beginning with Philippe de Commines. Details to be announced at the opening of the session. Professor Lafleur.

14. COMPARATIVE METHODS IN LITERARY STUDY. — A course of lectures setting forth the chief tendencies manifested in contemporary criticism, and here applied to the examination of important literary relations between the Continent of Europe and England through the works of Montaigne, Molière, Voltaire, LeSage, etc.; with ample reference to the literature of Germany, Spain, and Italy, in corresponding manner. Two hours a week. Prof. Lafleur.

15. ENGLISH PROSE FROM DRYDEN TO BURKE.—Details and readings to be announced at the beginning of the session. Prof. Lafleur.

16. AMERICAN AND CANADIAN LITERATURE.—A historical and critical outline of English Literature in the New World. Two hours a week. Miss Cameron.

17. TENNYSON (Continuation) and MINOR POETS of the NINETEENTH CENTURY.

For examination: In Memoriam, Maud and the Idylls of the King. Readings from minor poets will be announced at the beginning of the session. For In Memoriam the edition published by Macmillan will be found useful. Two hours a week. Dr. Moyse.

Any of the above honour courses may be taken as an ordinary course with the approval of the Faculty, provided that the time-table allows of such substitution.

The English requirements for the honour courses in English and Latin, English and French and English and German are as follows:—

Third Year.—Lecture course 5 and three other courses chosen from 9, 10, 11, 13.

Fourth Year.—One hour per week of language and three of the courses enumerated above which have not been taken in the third year.

In the English and History honour course, third and fourth years, students may choose each year from the programme for the third and fourth years any courses aggregating six hours a week.

DEPARTMENT OF MODERN LANGUAGES.

PROFESSOR:—HERMANN WALTER.
ASSOCIATE PROFESSOR:—R. DU ROURE.
ASSISTANT PROFESSOR:—J. L. MORIN.
LECTURERS:—E. T. LAMBERT. LOUIS PERDRIAU.
LECTURER IN FRENCH (ROYAL VICTORIA COLLEGE):—MISS G. GRÉTERIN.
LECTURER AND TUTOR IN GERMAN (ROYAL VICTORIA COLLEGE):—MISS A. SCHAFHEITLIN.

A.—French.

Owing to the position which this University occupies in the midst of a very large French-speaking population, there is a permanent demand for courses of a practical, conversational character. The Department profits by the co-operation of French church services, French newspapers, French theatres, French literary clubs, and public lecture courses in the French language.

In drawing up the following courses endeavours have been made not only to provide for the maintenance of academic methods, but also to meet the special needs of the professional men of the Province of Quebec, every student being given the opportunity to learn to speak French. In the first

and second years the French language is largely used in class instruction. In the third and fourth years all lectures are given and all studies carried on in French.

Honours may be taken in French and German together or in Latin and French or in Latin and German, as well as in English and French or in English and German.

ORDINARY COURSES.

First Year.

1. Vreeland & Koren, French Syntax and Composition (Holt); Super, Histoire de France (Holt); Maupassant, Huit Contes Choisis (Heath).

2. Lemaître, Contes extraits de Myrrha (Heath); Labiche, La Grammaire (Heath); Daudet, Selected Stories (A. B. Co.); Milhau, Choix de Poésies (Le meunier, son fils et l'âne, Oceano Nox, La mort du loup, La nuit de mai, Les yeux; Dumas, Napoléon, including the passages for translation into French (Macmillan).

Advanced Section (in place of course 2): French Short Stories selected by Buffon (Holt); Taine, Les Origines de la France Contemporaine (A. B. Co.); Molière, Les Précieuses Ridicules; Milhau, Choix de Poésies (Renouf).

Four hours weekly, two for each course.

Second Year.

Summer Readings, for students entering on their second year:—Corneille, Cinna (Holt); Daudet, Le Petit Chose (Heath).

The examination on summer readings will be held in the first week of the session.

Sessional Lectures:—

3. Vreeland and Koren, French Syntax and Composition (Holt); Corneille, Le Cid (Holt); Bazin, Les Oberlé (Holt); Elementary Historical French Grammar.

4. Hugo, Les Misérables (Holt); Molière, Les Femmes Savantes (Heath); Racine, Andromaque; Mansion, Esquisse de la Littérature Française (McDougall & Co. London), pp. 62-155.

Four hours weekly, two for each course.

Advanced Section (in place of course 4), Molière, Les Femmes Savantes (Heath); Racine, Andromaque; Lesage, Gil Blas (Heath); Beaumarchais, Le Barbier de Séville (Macmillan); The Oxford Book of French Verse; Mansion, Esquisse de la Littérature Française.

Third and Fourth Years.

The courses will consist mainly in the study of French literature and advanced prose composition.

Summer Readings for students entering on the third or fourth year:—Racine, Britannicus; Molière, L'Avare.

The examination on summer readings will be held in the first week of the session.

Sessional Lectures:—

5. For 1913-14:—LITERATURE, in the XVIIth and XIXth Centuries. Lesage, Gil Blas (Heath and Co.); Marivaux, Le Jeu de l'Amour et du Hasard: Buffon, Discours sur le Style; Diderot, Paradoxe du Comédien (Bib. Nat.); Sedaine, Le Philosophe sans le savoir; J. J. Rousseau, Selections; Voltaire, Zaïre.

Victor Hugo, Ruy Blas; Musset, Selections (Ginn and Co.); Balzac, Eugénie Grandet; A. Chénier, Chefs-d'œuvre lyriques (Gowan's Internat. Library); Flaubert, Trois Contes; Modern French Lyrics (Heath); Dumas, L'Etrangère; Doumic, Histoire de la Littérature Française.

PROSE COMPOSITION:—Spiers, Graduated Course of Translation into French Prose (Simpkin, Marshall and Co., London).

6. For 1914-15—(*a*):—FRENCH LITERATURE, from the XIth to the end of the XVIIth Century. Darmsteter, Morceaux choisis du XVIième siècle; Corneille, Polyeucte; Racine, Les Plaideurs, Andromaque; Molière, Misanthrope; Boileau, Choix d'Epitres et de Satires; La Bruyère, Selections; Madame de la Fayette, La Princesse de Clève; Doumic, Histoire de la Littérature Française.

PROSE COMPOSITION:—Spiers, Graduated Course of Translation into French Prose (Simpkin, Marshall and Co., London).

N.B.—In order to be admitted to the third year French a student must know French well enough to take lectures delivered in French and express himself in French with some fluency and correctness.

Four hours weekly.

HONOUR COURSES.

Third and Fourth Years.

In order to obtain honours, candidates must be able to speak French fluently.

7. HISTORY OF LITERATURE:—History of the French Drama. Two hours weekly.

8. MEDIÆVAL FRENCH LITERATURE AND PHILOLOGY:—Darmsteter's Cours de Grammaire Historique, and Bartsch, Chrestomathie de l'Ancien Français. Three hours weekly.

9. COMPOSITION. One hour weekly.

10. FRENCH PHONETICS:—A course for students who intend to become teachers of French.

N.B.—Before entering on their fourth year course, honour students are expected to have read the following:—Corneille, Le Cid, Horace, Cinna, Polyeucte; Racine,—Andromaque, Britannicus, Phèdre, Athalie; Molière,—Ecole des Femmes, Misanthrope, Tartuffe, Le Bourgeois Gentilhomme, Les Femmes Savantes; Boileau,—L'Art Poétique; except when any of these texts are part of the readings prescribed for the ordinary course in the fourth year.

B.—German.

ORDINARY COURSES.

Beginners' Course.

1. Van der Smissen und Fraser, High School German Grammar (Copp, Clark Co.); Müller and Wenckebach, Glück Auf (Ginn); Nichols, Easy German Reader (Holt).

Four hours weekly.

First Year.

2. Van der Smissen und Fraser, High School German Grammar (Copp, Clark Co.); Moscher, Wilkommen in Deutschland (Heath); Baker's German Stories (Holt); Freytag, Die Journalisten (Ginn); Collmann, Easy German Poetry (Ginn); Notes on the History of Germany; Horning, German Composition.

Four hours weekly.

Second Year.

Summer Readings, for students entering on their second year, and obligatory for students coming from the Beginners' Class; Riehl, Die vierzehn Nothelfer (A. B. Co.); Moser, Der Bibliothekar (Heath); Schrakamp, Ernstes und Heiteres (A. B. Co.).

The examination on summer readings will be held in the first week of the session.

3. *Sessional Lectures.* — Horning, German Composition; Schiller, Jungfrau von Orleans (Holt); German Historical Prose (Holt); Gœthe, Egmont (Ginn); Keller, Bilder aus der Deutschen Literatur (American Book Co., edition 1905).

Four hours weekly.

For students in the advanced course an additional hour will be provided for the purpose of further study.

Third and Fourth Years.

Summer Readings, for students entering on their third or fourth year:—Grillparzer, Der Traum ein Leben (Heath); Stifter, Das Heidedorf (Am. Book Co.).

The examination on summer readings will be held in the first week of the session.

Sessional Lectures:—

4. For 1913-14: — Lessing, Nathan (Am. Book Co.); Gœthe, Iphigenie (Pitt Press); Schiller, Wallenstein's Tod; Keller, Legenden (Holt and Co.): History of Literature Gœthe, The Romantic School (Kluge).

Prose Composition.

Four hours weekly.

5. For 1914-15:—Lessing, Emilia Galotti; Kleist, Prinz Friedrich von Homburg (Ginn); J. P. Richter, Selections (A. B. Co.); Grillparzer, Sappho (Ginn); Sudermann, Der Katzensteg (Heath); Schiller, Braut von Messina; History of German Literature, in the Classical Period (Kluge); Whitney and Stroebe, Advanced German Composition (Holt & Co.).

Four hours weekly.

HONOUR COURSES.

Third and Fourth Years.

The German language alone is used in class instruction, and in order to obtain honours, candidates must be able to speak German fluently.

6. 1913-14. HISTORY OF GERMAN DRAMATIC POETRY.

Two hours weekly.

7. COMPOSITION:—Perini, Extracts in English Prose (Hachette). One hour weekly.

8. MEDIÆVAL LITERATURE AND PHILOLOGY.

For 1914-15:—A general outline of the development of the German language and a special study of the Middle High German period, its language and literature.

The following books will be used:—Bachmann, Mittelhochdeutsches Lesebuch (Fæsi and Beer, Zurich; F. Kaufmann, Deutsche Grammatik.

Three hours weekly.

9. GERMAN PHONETICS:—A short course for students who intend to become teachers of German.

N.B.—Before entering on their fourth year course, honour students are expected to have read the following:—Lessing,—Minna von Barnhelm or Nathan der Weise, Emilia Galotti; Schiller,—Wilhelm Tell, Maria Stuart, Jungfrau von Orleans, Wallenstein, Ballads; Gœthe,—Goetz von Berichingen, Egmont, Hermann und Dorothea, Faust I, Poems; except when any of these texts are part of the readings prescribed for the ordinary course in the fourth year.

Spanish.

First Year.

Hill and Ford, Spanish Grammar (Heath); Matzke, Spanish Readings (Heath); Valera, El Pajero verde (Ginn); Moratin, El si de las ninas (Ginn); Galdos, Doña Perfecta (Ginn).

Four hours weekly.

DEPARTMENT OF ORIENTAL (SEMITIC) LANGUAGES AND LITERATURE.

PROFESSOR:—C. A. BRODIE BROCKWELL.
SESSIONAL LECTURER IN HEBREW:—REV. A. R. GORDON.
SESSIONAL LECTURER IN RABBINIC:—REV. NATHAN GORDON.
SESSIONAL LECTURER IN HELLENISTIC JEWISH LITERATURE:—REV. G. ABBOTT-SMITH.

The courses in this Department are intended to provide undergraduates in the Faculty of Arts with an exact knowledge of a limited portion of Semitic literature and history, combined with a general perspective of the whole Semitic field, including some of the leading contributions of Eastern civilization to Western thought and culture; and also to enable those who have attained sufficient knowledge in the same to pursue in the graduate school in much fuller detail many of the more important and attractive problems connected with Semitic philology, ethics, history and civilization. While the honour courses have been constructed with due regard to the respective claims of philology, ethics, history and archæology for the purpose of providing a comprehensive, useful and attractive form of mental training, they have also been carefully adapted to meet the needs of various students, *e.g.* those who are especially interested in the Eastern sources of our own civilization; those who require a knowledge of Arabic, either as candidates for the Indian or Egyptian civil service or because they intend to engage in Eastern trade and commerce; as well as of theological students of all persuasions, whether destined to labour ultimately at home or in the Oriental field.

Since the real value of a training in the Semitic Department lies in the honour work of the third and fourth years,

students are recommended to bear this in mind while taking the Hebrew of the second year, which is primarily intended to serve as a preparation for more advanced studies.

For honours, the student has a choice of one of four courses to which he is required to devote the whole of his time, *i.e.*, either I, the combined Greek and Hebrew course; or II, the Hebrew; or III, the Arabic; or IV, the Aramaic and Syriac. In No. II the Hebrew language, in No. III the Arabic language and in No. IV the Aramaic language (including Syriac) forms the main linguistic study. Each of these three full honour courses includes at least three subjects: (1) an exact study of the principal language by which the course in question is designated; (2) a less detailed study of one additional language, and (3) a general knowledge of the history and literature connected with the principal language. In addition to these three subjects a " fourth " or " additional subject " is strongly recommended for all those who seek first class honours.

In each of the honour courses, II, III and IV, an elementary knowledge of Semitic comparative philology is also required.

Though the ordinary Hebrew course of the second year is intended primarily as a preparation for honour work, ordinary courses are also provided for the third and the fourth years, and students who have taken the Hebrew of the second and the third years can either continue the same language in the fourth year or substitute either Arabic, or Aramaic and Syriac, subject to the possibility of arranging the time tables satisfactorily. Pointing in the different systems, sight translation and the writing of proses, grammar papers and essays form a marked feature of all the courses.

Ordinary Courses.

A. Hebrew Texts (1) Genesis I-XI; I Kings XVII-XXI; Psalms I-X. (2) Genesis XLIX; Exodus XIV-XV; Deuteronomy V-X, XXII, XXXIII; Judges IV and V; Jeremiah XXXI; and Proverbs I-IX. (3) Selections from the Prophets. (4) Ezra IV, 8; VI, 18

and VII, 12-26; Esther; The Mishna Tract; Pirke Abôth; and Selections from Rashi's Commentary on Genesis.

B. SEMITIC HISTORY (brief outlines of), with reference to recently discovered documents.

C. TEXTUAL AND LITERARY CRITICISM, with special reference to the Biblical texts prescribed in A (1) (2) and (3).

D. ARABIC. The Arabic V.S. of Genesis I-XI; the Kur'an, Suras, I, LXI, LXXI, and CXIV; and Socin's Arabic Grammar, pp. 35 to 47.

E. ARAMAIC AND SYRIAC. The Aramaic portions of Ezra and Daniel; The Sermon on the Mount (Matt. 5-7) in the Peshitta and Curetonian V.S.S.; The Aramaic Sources and Sentences of the New Testament; and the Hymn of the Soul.

F. THE LITERATURE OF THE JEWISH HELLENISTS, with special reference to the Alexandrian Version. Text:—Selections from the Prophets.

Lectures:—

Second Year:—A (1) and B. Four hours weekly.

Third Year:—A (2) and C or A (3) and F. Four hours weekly.

Fourth Year:—A (3) continued or A (4), with either C or D or E or F. Four hours weekly.

HONOUR COURSES.

Third and Fourth Years.

I. Hebrew and Greek.

[For Greek, see page 109.]

The Hebrew subjects prescribed are the same as those in 1 and 2 of the full Hebrew honour course (No. II, below).

II. Hebrew.

1. HEBREW TEXTS:—

Third Year.

The Hexateuch, Judges, Samuel, Kings, Jonah, Micah, Ruth; Psalms, Book I, and Job, chapters 1-20. Six hours a week.

Fourth Year.

Isaiah, Jeremiah, Ezekiel, the remaining Minor Prophets, and Kethubim, excepting 1 and 2 Chron. Six hours a week.

2. HISTORY:—

Third and Fourth Years.

Greek and Roman periods. One hour weekly.

3. ADDITIONAL LANGUAGE:—

Third and Fourth Years.

At least one of the following:—

(1) *Arabic*:—The Arabic v. s. of Genesis I-XI; The Kuran, Suras I, LIII, LVII, LXI, LXXI, and CXIV; Muallakât, poem III; and pages 35 to 47 of Socin's Arabic Grammar and part of No. 30 in the Letters of Abu'Lala.

(2) *Aramaic.* The ordinary course E with the addition of Merx, pages 11 to 57 and 132 to 139; Psalm 1 to 20 in the Peshitto, and the Selections in Brockelmann's Syriac Grammar.

(3) *Phœnician,* including Punic and Neo-Punic:—All the inscriptions in this language given in G. A. Cooke's North Semitic Inscriptions.

(4) *Ethiopic.* Prætorius, pp. 31-45 and Du Chaine, pp. 228-244. Three hours weekly.

4. SPECIAL (OPTIONAL) SUBJECT.—

Third and Fourth Years.

One only of the following:—

(1) *Semitic Archæology,* including the history of the Hebrew alphabet from the earliest times up to 1100 A.D., a knowledge of the writing materials used, and all the inscriptions in Hebrew, Phœnician, Punic, Neo-Punic, Moabitish, Egyptian, Aramaic, Nabatæan and Palmyrene in G. A. Cooke's North Semitic Inscriptions, as well as Babelon's Manual of Oriental Antiquities.

(2) *The history of the composition of the Mishna and Talmud.*

(3) *Hebrew Poetry and Oratory.*

(4) *The principles of Higher Criticism and of Biblical Criticism in General.*

(5) *History of Jewish Literature from A.D. 70 to 1500.*

(6) *Hellenistic Jewish Literature.*

(7) *The social institutions, customs and myths, and general folklore of the Northern Semites embodied in Hebrew literature.*

(8) *Comparative Philology of the Semitic Languages.*

Two hours weekly.

Students who do not take an optional subject are required to do two extra proses a week.

N.B.—In the following honour courses the years and hours are the same.

III. Arabic.

1. ARABIC TEXTS:—

Third Year.

The Kuran Suras, 1-3 and 25-100. Baidawi's Commentary (Sura, 3.1-50). The Muallakât, I.III.V.

Fourth Year.

The rest of the Kuran and of Baidawi on Sura, III. The Annals of Tabari, pp. 1-11, and the Prolegomena of Ibn Khaldûn.

2. HISTORY. General history of the Caliphate, with special reference to the Caliphs Abû Bakr, Omar, Othmân, Aly, Mansûr and Mustaasim.

3. ADDITIONAL LANGUAGE. One only of the following:—
   (1) *Hebrew* as in the Ordinary Course A (1) and (2), (3) and (4).
   (2) *Aramaic* as in the Ordinary Course E.
   (3) *Phœnician* as in Hebrew Honour Course II.
   (4) *Ethiopic* as in Hebrew Honour Course II.

4. SPECIAL (OPTIONAL) SUBJECT. One only of the following:—

(1) *Semitic Archæology.* Including the history of the South Semitic and classical Arabic alphabets in Isaac Taylor's "The Alphabet," Vol. I, Chaps. V and VI, Hommel's Südarabisches Chrestomathie, Lidzbarski's Altnordarabishes I and II, and Südarabische Iuschriften, both in Ephemeris fur Semitische Epigraphik; and Babelon's Manual of Oriental Antiquities.

(2) *Arabian contributions to Western civilization and culture.*

(3) *Arabic Poetry.*

(4) *The Structure, contents and ethics of the Kur'an.*

(5) *History of Arabic Literature in Huart's Arabic Literature and De Boer's Philosophy in Islam.*

(6) *Semitic social institutions, customs, and myths, and general folklore, with special reference to the Southern Semites.*

(7) *Comparative Philology of the Semitic Languages.*

IV. Aramaic.

1. ARAMAIC AND SYRIAC TEXTS:—

Third Year.

As in Ordinary Course E, and II Hebrew Honour Course 3 (2), with the addition of Onkelos on Genesis, Jonathan on Isaiah, 40-50, The Acts of Thomas.

Fourth Year.

Selections from Aphraates, Bardaisan, Julian the Apostate. Onkelos on Deuteronomy Petrus der Iberer, and E. Sachau's Aramaische Papyrus and Ostraker aus einer judischen Miſitär-Kolonie zu Elephantine.

2. HISTORY. The place of the Aramæans in history.

3. ADDITIONAL LANGUAGE. One only of the following:—

(1) *Arabic.* As in Ordinary Course D, with the addition of Suras 53, 57, and 71.

(2) *Hebrew.* As in Ordinary Course A (2), (3) and (4).

(3) *Phœnician.* As in II Hebrew Honour Course.

(4) *Ethiopic.* As in II Hebrew Honour Course.

4. SPECIAL (OPTIONAL) SUBJECT:—One only of the following:—

(1) *Semitic Archæology.* Including the history of the Aramæan alphabets; all the most important Aramaic Inscription dockets and papyri Assyrian, Syrian, Arabian Nabatæan, Palmyrene, Sinatic, old Egyptian and Assuan, and Babelon's Manual of Oriental Antiquities.

(2) *The history and significance of Syriac literature.*

(3) *The principles of Syriac poetry and oratory.*

(4) *The Structure, contents and ethics of the Talmud.*

(5) *The history of the genesis and development of the Neo-Hebrew language and literature.*

(6) *The literary influence of Aramaic upon Jewish and Early Christian Literature.*

(7) *Comparative Philology of the Semitic Languages.*

DEPARTMENT OF PHILOSOPHY.

PROFESSOR:—W. CALDWELL.

ASSOCIATE PROFESSOR OF LOGIC AND METAPHYSICS:—
J. W. A. HICKSON.

ASSISTANT PROFESSOR OF EXPERIMENTAL PSYCHOLOGY:—
WILLIAM D. TAIT.

The courses in this Department are designed to meet the wants of students in the Faculty of Arts, of students in the professional schools, of partial students and of graduates.

In all the ordinary courses such topics as the subject of scientific method, the relation of ethics to legal and social questions, the relations of psychology and philosophy to education, etc., are definitely kept in view.

GROUP I.

(*Primarily for Second Year Undergraduates.*)

1A. ELEMENTARY PSYCHOLOGY. Mon. and Wed. at 10 a.m. Dr. Tait.

1B. LOGIC. A course in the elements of logic, including the fallacies. Fortnightly exercises.

Text-Book:—S. H. Mellone, Introductory Text-Book of Logic, (fourth edition) omitting section 5, chap. IV, and chaps. IX and XI. Use will be made of Lafleur's Illustrations of Logic. Thursday and Friday, at 10 a.m. Dr. Hickson.

1C. INTRODUCTION TO PHILOSOPHY. A short course of twelve lectures upon the nature of philosophy and its relation to the sciences, and its place as a university study. These lectures will take the place for some weeks of the ordinary lectures in 1A or in 1B. Dr. Caldwell.

GROUP II.

(*For Third and Fourth Year Undergraduates and for Graduates.*)

2A. MORAL PHILOSOPHY. Outlines of ethics as a science; morality in the race and in the individual; the postulates and divisions of ethical science; theories of conscience and of the moral standard; the ethics of idealism and the ethics of evolution.

2B. APPLIED ETHICS. Ethics and the sociological movement of recent times; the ethics of the social questions; the duties and the virtues and the unity of the moral life; moral pathology; moral training; the ethical problem of the present time. M. T. Th. F., at 12. Dr. Caldwell.

3. ADVANCED MORAL PHILOSOPHY. Designed to meet the wants of students who have taken course 2, or who are otherwise competent to undertake the study of the more important

works (classical, modern, and recent) upon the theory of morals, or to pursue the study of special questions in ethics and social philosophy. Two to four hours weekly. Dr. Caldwell.

4. GREEK PHILOSOPHY. Pre-Socratic physicists in Ionia, Italy and Sicily. The Athenian Period, and the rise of systematic logic, ethics and psychology; Socrates, Plato, Aristole; general diffusion of philosophy over ancient life as a rule of conduct; Stoicism, Epicureanism, Scepticism, Neo-Platonism.

Books of Reference:—The various source-books, such as Ritter and Preller, Fairbanks, Bakewell, Wallace, etc., Zeller's Outlines and History; Aristotle's Metaphysics, Book I, Taylor's Translation. Two hours, or more, weekly. Dr. Caldwell.

5A. HISTORY OF MODERN PHILOSOPHY. From the Renaissance to Kant. First term.

5B. HISTORY OF MODERN PHILOSOPHY. From Kant to the present time. Second term.

Works of Reference:—The various Histories of Philosophy, by Falckenberg, Höffding, Weber, etc. Use will be made of Rand's Modern Classical Philosophers.

Four hours a week. Dr. Caldwell and Dr. Hickson.

6. LOGIC OF SCIENTIFIC METHOD. Theory of induction and its pre-suppositions; methods of scientific proof; methodological relation of the historical to the natural sciences; use of the theory of probabilities; classification of the sciences.

Works of Reference: Mill, System of Logic, Books III and VI; Jevons, Principles of Science; Sigwart's Logic, Vol. II; Hobhouse, Theory of Knowledge.

Tues., Thurs., at 12 throughout the session. Dr. Hickson.

7. THEORY OF KNOWLEDGE AND METAPHYSICS. For fourth year students. Papers required.

Four hours weekly. Dr. Hickson.

8. PHILOSOPHICAL SEMINARY. Discussion of Locke's Essay on the Human Understanding and its place in modern thought. Two hours weekly. Dr. Hickson.

9. EXPERIMENTAL PSYCHOLOGY. Four hours laboratory work and conferences. Dr. Tait.

10. Advanced Psychology. Four hours per week. Dr. Tait.

11. Social Psychology. This course will have special reference to social problems of the present day. It will include a discussion of the instincts and impulses as dynamic factors in society, insanity, feeblemindedness, juvenile delinquency, crime, intelligence tests, heredity, environment, etc. Two hours per week. Dr. Tait.

Students for honours are required to take three full courses from the above during each of the third and fourth years, together with a course in any of the following subjects:—education, history, economics, physics, physiology, zoology. They are also urgently recommended to acquire a reading knowledge of French and German.

Group III.

(Primarily for Graduates).

12. Advanced Experimental Psychology. Special work will be done in mental and physical measurements. This course will be conducted as a seminary. Dr. Tait.

13. Psychological Laboratory. The facilities of the laboratory are at all times at the disposal of anyone who is qualified to do original work.

14. Leading Philosophical Theories of the Last Fifty Years. It is desirable that students taking this course shall have already taken course 5A and 5B. Two hours weekly. Dr. Hickson.

15. Ethical Seminary. Proposed subject, Recent and Contemporary Ethical theories. Two hours weekly. Dr. Caldwell.

Summer Readings.—All students in philosophy, after the second year in Arts, are encouraged to undertake a course of summer reading in connection with their winter work.

Those contemplating graduate work are recommended to correspond with the Department in the spring or summer preceding their period of registered study.

DEPARTMENT OF HISTORY.

PROFESSORS:—{ CHARLES W. COLBY.

ASSOCIATE PROFESSOR:—C. E. FRYER.

TUTOR:—ETHEL HURLBATT.

ORDINARY COURSES.

First Year.

1. INTRODUCTION TO EUROPEAN HISTORY.

An elementary course starting with the ancient world at about 1000 B.C., and tracing in outline the development of European civilization to the beginning of the mediæval period. Stress is laid upon historical geography, and upon the method of historical study. Students are required to provide themselves with Putzger's Historischer Schul-Atlas. The class will be divided into three sections. Each week a short written test will be given upon assigned reading, based upon the following: Plutarch's Lives; Sanderson, Ancient Oriental Monarchies: Cox, Greeks and Persians; Curteis, Rise of the Macedonian Empire; Botsford, History of Rome; Adams, Civilization in the Middle Ages, Chapters I-V; with additional reading for the Christmas and sessional examinations. One hour a week.

Second Year.

2. MEDIÆVAL AND MODERN EUROPE.

A continuation of Course I, and designed, with it, to complete a general outline of European history. Stress will be laid upon the division of the subject into periods, and an attempt will be made to indicate the essential features of each successive period. Readings will be assigned and tested at intervals by written papers in the classroom. The reading for the course will include Robinson, History of Western Europe; Adams, Civilization in the Middle Ages; Hamlin, History of Architecture; selections from Gibbon, Decline and Fall of the Roman Empire, Macaulay's Essays, and other works. Two hours a week.

Honour and Continuation Courses.

Third and Fourth Years.

3. The History of Europe, from the accession of Augustus to the death of Luther, B.C. 27—A.D. 1546.

In this course special attention will be given to institutions and movements. Topics for investigation will be assigned, and students will write at least one thesis during the year. Readings to accompany each lecture are assigned in the syllabus for the course. Four hours a week.

4. The Renaissance. Two hours a week.

5. The Early Reformation. Two hours a week.

6. The Catholic Revival and the Thirty Years' War. Two hours a week.

7. The History of England since 1784. A study of the development of industrial democracy in England. The course begins with the Industrial Revolution and the conditions of government before 1832. In addition to an assignment of general reading each member of the class will be expected to make a study of two statesmen of the 19th century, and a comparative study of three general histories. Four hours a week.

8. The Political and Constitutional History of Europe since 1789. Four hours a week.

9. Canada, Government and Public Policy. Four hours a week for the first term.

10. English Constitutional History.—1307. Two hours a week.

11. History of Canada, 1810-1867. Two hours a week.

12. Recent History of the Great Powers. A discussion of political questions and tendencies since 1876, with special reference to the increase of armaments, the partition of Africa, the shaping of the Far East, railway communication, and international arbitration. The position of the United States as a world power will be touched upon.

This course is open only to graduates and advanced undergraduates.

Texts:—Honour students in history will be examined at the end of the third year on the following texts:—Herodotus, VI-VII, Macaulay's trans.; Thucydides, I, II, 1-65, VI, VII, Jowett's trans.; Plutarch, The Lives of Themistocles, Pericles, Pyrrhus, Caius Gracchus, Cato the Younger, and Julius Cæsar, Clough's trans.; Polybius, Books VI-IX, Shuckburgh's trans.; Livy, Books XXI-XXII, Church and Brodribbs' trans.; Tacitus, Annals, Book I, Germania, Vita Agricolæ, Church and Brodribb's trans.

Honour students in history will be examined at the end of the fourth year on the following texts:—Clarendon, History of the Rebellion, Book VII; Burnett, History of My Own Time, Book IV, from the beginning of 1689 to the end of the book; Gibbon, Decline and Fall, chapters I, II, III, XXIII, L, LVII, LVIII; Burke, Reflections on the French Revolution; Macaulay, History of England, chapters IV-IX; Captain Mahan, Influence of Sea Power on History; Buckle's History of Civilization, chapters I-II; Parkman, Montcalm and Wolfe; Lord Acton, Lectures on Modern History.

In addition to the above, a certain amount of work may be done in another Department.

Graduate Courses.

The department is prepared to accept a limited number of students for graduate study. Students proposing to offer History as a major subject for the Master's degree in the Graduate School are expected to have completed the ordinary courses of the first and second years, and two full courses of the third and fourth years. Students entering the Graduate School from other colleges will be required to show an equivalent to such courses.

DEPARTMENT OF ECONOMICS AND POLITICAL SCIENCE.

PROFESSOR:—STEPHEN B. LEACOCK.
ASSOCIATE PROFESSOR:—J. C. HEMMEON.

ORDINARY COURSES.

Second Year.

1. ELEMENTS OF POLITICAL ECONOMY.

Two hours per week throughout the session. Dr. Leacock.

Third or Fourth Year.

2. PRINCIPLES OF ECONOMIC THEORY.

Four hours per week throughout the session. Dr. Hemmeon.

3. PRINCIPLES OF POLITICAL SCIENCE.

Fours hours per week throughout the session. Dr. Leacock.

HONOUR AND CONTINUATION COURSES.

4. ECONOMIC HISTORY.* Four hours per week during the first half of the session. Dr. Hemmeon. (Omitted in 1913-1914).

5. MONEY AND BANKING.* Four hours per week during the second half of the session. Dr. Leacock. (Omitted in 1913-1914).

6. POLITICAL ECONOMY PRIOR TO THE NINETEENTH CENTURY.*

Four hours per week during the first half of the session. Dr. Hemmeon. (Omitted in 1913-14.)

7. POLITICAL ECONOMY IN THE NINETEENTH CENTURY.*

Four hours per week during the second half of the session. Dr. Leacock. (Omitted in 1913-1914.)

8. ECONOMIC FACTORS IN THE DEVELOPMENT OF SOCIETY*.

Four hours per week during the first half of the session. Dr. Hemmeon.

9. SOCIAL REFORM.*

Four hours per week during the second half of the session. Dr. Leacock.

10. CANADA:—FEDERAL AND PROVINCIAL GOVERNMENTS.

Four hours per week during the first half of the session. Dr. Leacock.

11. PUBLIC FINANCE.

Four hours per week during the second half of the session. Dr. Hemmeon.

12. CANADA:—INDUSTRIAL AND ECONOMIC PROBLEMS.

Two hours per week throughout the session. Dr. Hemmeon.

Honour students of the third year will take courses 2, 3, 8, 9, together with ordinary history or French or philosophy of the third year.

Honour students of the fourth year will take courses 8, 9, 10, 11, 12; together with a half course in history, French, philosophy or Roman law as arranged in consultation with the Department.

Students of the fourth year who have taken the third year ordinary course in political economy may offer as a continuation, course 3 or courses 8 and 9.

Students of the fourth year who have taken the third year ordinary course in political science may offer as a continuation, course 2 or courses 10 and 11, or courses 10 and 12.

Four exhibitions known as the Mackenzie Exhibitions, are awarded annually in the Department, two of the value of one hundred dollars and two of the value of fifty dollars. For regulations see page 60.

Two prizes, known as the "Industrial Canada" prizes, one of $60 and one of $30, are awarded annually in the department for the two best essays presented on Canadian economic subjects. Information as to the conditions of the award may be obtained from the Registrar of the University.

GRADUATE STUDY.

Graduate work in the department is carried only as far as the M.A. degree. In order to be admitted to graduate study applicants must have completed the ordinary and continuation courses of the third and fourth years in both economics and political science as indicated above (courses No. 2, 3, 10, 11. and either 4 and 5, or 6 and 7, or 8 and 9). Graduates may obtain this standing by taking the required courses, but such work is not to be done as a part of the M.A. course nor to run concurrently with it. Applicants may be admitted to

graduate study who have taken in some other university work which in the opinion of the department is equvalent to the qualifications named above. The courses marked with an asterisk above are open to graduates who have not already taken them as undergraduates. Graduate students may obtain the M.A. degree after (a) one year of resident study with lectures as assigned by the department, and approved by the Committee on Graduate Studies in each case, and on the presentation of a thesis approved by the department; (b) two or more years of non-resident study as recommended by the department, and approved by the Committee in each case, and on the presentation of a thesis as above.

DEPARTMENT OF EDUCATION.

PROFESSOR:—J. A. DALE.
ASSISTANT PROFESSOR OF EXPERIMENTAL PSYCHOLOGY:—
WILLIAM D. TAIT.
HEAD OF THE SCHOOL FOR TEACHERS, MACDONALD COLLEGE:—

[For the staff of the School for Teachers, see page xxxvii.]

First and Second Years.

Students intending to be teachers may, if they wish, consult Prof. Dale as to their courses.

ORDINARY COURSES.

Third or Fourth Years.

1. HISTORY OF EDUCATION.

(*a*) Ancient and Mediæval (not given in 1913-1914).

(*b*) Modern and Contemporary.

Two hours a week. Tues., 5; Thurs., 5. Prof. Dale.

2. (*a*) THEORY AND PRACTICE OF EDUCATION. Two hours a week, Tues., 9, Thurs., 9. Prof. Dale.

(*b*) SCHOOL ORGANIZATION AND MANAGEMENT. In conjunction with 2 (a) a short course will be given by Dr. Sinclair.

These courses are required for the First Class Academy Diploma of the Province of Quebec, together with 50 half days of observation and practice, which can be taken partly

in term time, and may be divided between the years. Course 3 may, with the approval of the Department, be taken as an option for one of the courses 1 and 2.

Exemptions are given on evidence of previous successful experience in teaching, so long as the total credits do not interfere with specified practice. Credit is given for attendance on courses 5 and 6, where satisfactory to the instructors; and this is recorded on the diplomas.

3. EDUCATIONAL PSYCHOLOGY. For students who have taken second year psychology, or take it concurrently with this course. Two hours a week, Mon., 2, Fri., 2. Dr. Tait.

OPTIONAL CLASSES.

4. PHYSICAL EDUCATION. A course of 20 lessons of 1½ hours each is offered on the principles and practice of physical education. The course will cover elementary anatomy, physiology and hygiene, the theory of gymnastics and class teaching.

Students will be required to give four lessons (practical) to children, in the presence of the physical director, and to take an examination. This examination is recognized by the Strathcona Trust as qualifying for their certificate. (a) Women Students, Miss Cartwright; (b) Men Students, Dr. Harvey and Mr. Lamb. For further facilities in Physical Education, see Physical Education Department, page 340.

5. SCHOOL ART. A course of 20 lessons is offered on the principles and practice of art in relation to school-work; comprising brush-work, drawing, blackboard work, elements of design. Sat. 9. Prof. Armstrong.

POST-GRADUATE COURSE.

6. SEMINAR:—Readings, reports, theses. Two consecutive hours, alternate weeks, throughout the session. Two years' study covers the non-resident course for the M.A. degree. Each year's work comprises a complete course, but if the number of applicants exceeds the limit (12), separate classes may be formed to cover the first and second years respectively of the M.A. course. Prof. Dale.

ELEMENTARY, MODEL AND KINDERGARTEN DIPLOMAS.

The training for these diplomas is conducted at Macdonald College.

An exhibition of $150 is offered in the Faculty of Arts to the best applicant from the Model Class, who has fulfilled the entrance requirements. (See page 52.)

COURSES IN SPECIAL SUBJECTS.

Given under the Teachers' Training Committee.

(*Primarily for Teachers*).

PHYSICAL EDUCATION. A three-year course for the training of specialists, leading to a diploma. See Physical Education Department, page 340. The Specialist certificate is recognized by the Council of Public Instruction.

FRENCH. A summer school for teachers of French.

SCHOOL ART. A summer course. (See also 5, above.)

KINDERGARTEN ASSISTANTS. A sessional course leading to a diploma.

Particulars, which are published separately, may be obtained on application to the Registrar.

CONSTITUTIONAL LAW.

PROFESSOR:—F. P. WALTON.

The Constitutional Law of Canada will be treated in the following order:—(1) Canadian Constitutional History, prior to Confederation; (2) the British North America Act, and the leading cases under it which illustrate the respective powers of the Dominion and the Provinces; (3) the fundamentals of English Constitutional Government which form the basis of the Canadian Constitution; (4) the Cabinet System; (5) the difference between English and French practice as to responsibility of officials.

Two hours a week.

ROMAN LAW.

PROFESSOR:—F. P. WALTON.

A course is offered in Roman Law, open to third and fourth year students in Arts, and qualifying as an option for the B.A. Degree. Details are given on page 272.

DEPARTMENT OF MATHEMATICS.

PROFESSOR:—J. HARKNESS.
ASSOCIATE PROFESSOR:—A. S. EVE.
ASSISTANT PROFESSOR:—T RIDLER DAVIES.
LECTURER:—J. B. MABON.

ORDINARY COURSES.

First Year.

1. PLANE AND SOLID GEOMETRY. The equivalent of Books IV, VI and XI of Euclid, with supplementary matter from Hall and Stevens' Euclid. Two hours a week (before Christmas). Mr. Davies.

ALGEBRA. Hall and Knight's Elementary Algebra (omitting chapters 40-42 inclusive, or the same subject matter in similar text books. Two hours a week, (after Christmas), Mr. Davies.

TRIGONOMETRY. Hall and Knight's Elementary Trigonometry to page 210 and chapter 19; nature and use of logarithms [Bottomley's four-figure tables]. Two hours a week, throughout the session. Mr. Davies.

Second Year.

2. GEOMETRY. (*a*) Solid Geometry, continuation of the first year; (*b*) Geometrical Conic Sections. Wilson's Solid Geometry and Geometrical Conics. Three hours a week, before Christmas. Mr. Davies.

ALGEBRA. Permutations and combinations; binomial theorem; exponential and logarithmic series; interest and annuities; undetermined coefficients; partial fractions; summation of typical series; probabilities; determinants; graphic methods. Three hours a week, after Christmas. Mr. Davies.

Text-Book:—Hall and Knight's Higher Algebra.

SPHERICAL TRIGONOMETRY. A short course compulsory for students proceeding to the Faculty of Applied Science. Students taking the advanced course in mathematics are recommended to take this course.

Third or Fourth Year.

3. ANALYTICAL GEOMETRY (C. Smith). Two hours a week. Prof. Eve.

INFINITESIMAL CALCULUS (Lamb). Two hours a week. Prof. Harkness.

4. ASTRONOMY. This course is intended to give a general account of the main facts of astronomy, and the methods by which these facts are obtained. It may be taken by students who have attended the ordinary or advanced courses in mathematics of the first two years. Two hours a week. Mr. Davies.

ADVANCED COURSES.

First Year.

5. GEOMETRY AND TRIGONOMETRY. As in ordinary course, before Christmas. MODERN PURE GEOMETRY, after Christmas. Prof. Davies. Two hours a week. HIGHER ALGEBRA. Hall and Knight; theory of equations (part of Burnside and Panton). HIGHER TRIGONOMETRY (Carslaw). Prof. Harkness. Two hours a week.

Second Year.

6. ANALYTICAL GEOMETRY. C. Smith. Mr. Sullivan. Two hours a week.

INFINITESIMAL CALCULUS (Lamb); Osgood).
Prof. Harkness. Two hours a week.
Students are recommended to take the special short course in spherical trigonometry.

7. DYNAMICS, STATICS AND HYDROSTATICS. For students who are proceeding (1) to the Faculty of Applied Science, or (2) to third year honours in mathematics in Arts. Mr. L. V. King. Two hours a week.

HONOUR COURSES.

Third Year.

8. SELECTED TOPICS IN DIFFERENTIAL AND INTEGRAL CALCULUS.

9. Differential Equations.
10. Geometry of Three Dimensions.

Prof. Harkness and Eve. Four hours a week.

In addition students reading for honours will be required to take courses in physics, as arranged by the Physics Department.

Fourth Year.

The courses given will be selected from the following:—

11. Vector Analysis.
12. Theory of Functions.
13. Elliptic Functions.
14. Modern Analytical Geometry. Lectures in connection with Scott's Modern Analytic Geometry and the early chapters of Salmon's Higher Plane Curves.
15. Geometry of Position. Lectures on modern geometry, based on Reye's Geometry of Position.

Professor Harkness. Five hours a week.

In addition students reading for honours will be required to take courses in physics, as arranged by the Physics Department.

DEPARTMENT OF PHYSICS.

PROFESSORS:—HOWARD T. BARNES. A. S. EVE.

ASSISTANT PROFESSORS:—F. H. DAY. L. V. KING.

LECTURER:—J. A. GRAY.

SENIOR DEMONSTRATOR:—N. E. WHEELER.

DEMONSTRATORS:—A. A. SCOTT. C. H. SMITH. C. B. JAMES. S. FORBES. C. WILLIAMSON.

ORDINARY COURSES.

First Year.

1. PHYSICS.—This course has two objects: (1) to give the minimum acquaintance with physical science requisite for a liberal education to those whose studies will be mainly literary; (2) to be introductory to the courses in chemistry and other branches of natural science, and to the more detailed courses in physics in the third and fourth years. Only the most important principles in each branch of the subject will be treated, as far as possible, with reference to their historical development and mutual relations. Two lectures will be given per week which will be fully illustrated by experiments. During the session each student will be required to attend in the laboratory and make measurements involving the use of the following instruments:—balance, pendulum, barometer, thermometer, sonometer, telescope, microscope, tangent galvanometer, Wheatstone's Bridge. *Text-Book*:—Reid and Guthe, Macmillan. Full course. Tues. and Thurs. at 2.

Second Year.

2. MECHANICS AND HYDROSTATICS.—Two hours a week. (See page 148, course 7.)

Third Year.

3. HEAT, SOUND AND LIGHT.—(*Full Course.*)—These lectures are taken by third year ordinary students and second year honour and B.Sc. students. Prof. Barnes. Two hours per week.
Text-Book:—To be selected.
Laboratory course, three hours per week.
Text-Book:—Tory and Pitcher, and laboratory manuscripts. See courses 311 and 312 under Applied Science.

Fourth Year.

4. ELECTRICITY AND MAGNETISM.—(*Full Course.*—These lectures are taken by fourth year ordinary students, third year honour students, third year B.Sc. ordinary students and second year B.Sc. honour students.
Prof. Day, two hours per week.
Text-Book:—Magnetism and Electricity, by Brooks and Poyner (Renouf Publishing Co.).
Laboratory course, three hours per week.
Text-Book:—Tory and Pitcher and laboratory manuscripts.

HONOUR COURSES.

Second Year.

5. The ordinary third year course, together with more advanced work on either:—
(*a*) SOUND, LIGHT AND HEAT, or (*b*) ELECTRICAL THEORY. Prof. Barnes.
6. DYNAMICS. Prof. Eve.

Third Year.

7. PROPERTIES OF MATTER. Prof. Barnes.
8. The ordinary fourth year course, together with a more advanced course on:—
ELECTRICAL THEORY. Mr. Gray.
9. STATICS, DYNAMICS OF A PARTICLE AND RIGID DYNAMICS.

Fourth Year.

10. Vector Analysis.
11. Elements of Hydrodynamics.
12. Electrical Measurements. Prof. Barnes.
13. Electrical and Optical Theory. Mr. Gray.
14. Radioactivity. Prof. Eve.
15. Theory of Heat. Prof. Barnes.

DEPARTMENT OF CHEMISTRY.

Professor:—R. F. Ruttan.
Associate Professors:—Nevil Norton Evans. Douglas McIntosh.
Assistant Professor:—F. M. G. Johnson.
Lecturer:—V. K. Krieble.
Demonstrators:—A. R. M. McLean. J. W. Tait. R. Kirkpatrick. R. Skelton.

Ordinary Courses.

Second Year.

1. General Chemistry.—A course of lectures on elementary chemical theory, and on the principal elements and their compounds. The lectures are fully illustrated by means of experiments. Three hours a week. Dr. Ruttan.

Text-Books:—General Chemistry for Colleges, Alex. Smith; or Elementary Study of Chemistry, McPherson and Henderson. Three hours a week.

For Reference:—Modern Inorganic Chemistry, J. W. Mellor.

Elementary Practical Chemistry.—This course is compulsory for all undergraduates taking the above course of lectures. The work includes experiments illustrative of the laws of chemical combination, the preparation of pure chemical compounds, and elementary qualitative and volumetric analysis. Four hours a week. Dr. McIntosh.

Third or Fourth Year.

2. ORGANIC CHEMISTRY.—A general course of lectures on organic chemistry.

Text-book:—Perkin and Kipping's Organic Chemistry, or Remsen's Organic Chemistry. Three hours per week during the first term and two hours per week during the second term. Dr. Ruttan.

3. PRACTICAL ORGANIC CHEMISTRY.—The preparation and study of a number of typical organic substances. Ultimate organic analysis. Two periods per week for second term.

4. INORGANIC CHEMISTRY.—A course on physical chemistry.

Text-Book:—James Walker, Introduction to Physical Chemistry.

Two hours per week during the second term. Dr. Johnson.

5. ADVANCED PRACTICAL CHEMISTRY.—A course in laboratory practice in methods of gravimetric and volumetric analysis. Twelve hours per week during the first term.

Text-Book:—Gattermann's Practical Organic Chemistry.

HONOUR COURSES.

Third Year.

Honour students in the third year will be required to take all the ordinary courses of that year and in addition a course in qualitative analysis, with extra reading. They are also required to take Course No. 3 in physics page 151), and a half-course in calculus or biology or geology or mineralogy.

Fourth Year.

6. ADVANCED INORGANIC CHEMISTRY.—A course of lectures on inorganic chemistry, discussing elements and compounds in accordance with the general principles of physical chemistry. Two hours a week. Dr. Johnson.

7. Organic Chemistry.—A course of lectures on advanced organic chemistry, including the analysis of organic substances, calculation of formulæ, determination of molecular weights, polymerism, isomerism, etc., followed by a discussion of the more important derivatives of the aliphatic and aromatic series of compounds. Two hours a week. Dr. Ruttan.

8. Practical Organic Chemistry.—A complete course on the preparation and analysis of organic substances, with determinations of molecular weights, etc. Dr. Ruttan.

9. Physical Chemistry.—The lectures are a continuation of those given during the third year and include thermo-chemistry, the principles of thermodynamics as applied to chemical action, osmotic phenomena and their application in deducing the ionisation theory of solutions, a study of such physical properties of gases, liquids and solids as are known to depend on their chemical constitution, the phase rule and electro-chemistry. Two hours a week. Dr. McIntosh.
Books of Reference:—Ramsay's Text-Books of Physical Chemistry.

10. Practical Physical Chemistry.—Laboratory work will include the various methods of determining the molecular weights of gases and of substances in solution, accurate measurements of densities, refractive indices, surface tensions and specific rotations; also examples of chemical statics and kinetics, and electro-chemical measurements.

11. Quantitative Analysis.—An extensive course including both inorganic and organic methods.

12. Historical Chemistry.—A short course on the development of chemical theory. Dr. Johnson.

In the fourth year, honour students will select either courses 6, 7, 8 and 9 *or* 8, 9 and 10. In addition to these they must take course No. 4 in physics (page 151).

DEPARTMENT OF GEOLOGY AND MINERALOGY.

PROFESSORS:—{FRANK D. ADAMS. J. AUSTEN BANCROFT.

ASSISTANT PROFESSOR OF MINERALOGY:—RICHARD P. D. GRAHAM.

LECTURER:—JOHN STANSFIELD.

SESSIONAL LECTURER:—ALFRED E. BARLOW.

ORDINARY COURSES.

Third Year.

1. GENERAL GEOLOGY.—The lectures will embrace a general survey of the whole field of geology, and will be introduced by a short course in mineralogy. Especial attention will be devoted to dynamical geology and to historical geology, including a description of the fauna and flora of the earth during the successive periods of its past history.

   The lectures will be illustrated by the extensive collections in the Peter Redpath Museum, as well as by models, maps, sections and lantern views. There will be an excursion every Saturday until the snow falls, after which the excursion will be replaced by a demonstration in the Museum.

   Text-book:—Scott, An Introduction to Geology.

   Books of Reference:—Dawson, Hand-Book of Geology; Dana, Manual of Geology.

Three hours a week throughout the year, with additional excursions and demonstrations as above stated. Dr. Adams and Dr. Bancroft.

HONOUR COURSES.

Third Year.

In the third year, students pursuing the honour course will take General Geology, 1.

2. MINERALOGY.—Lectures and demonstrations illustrated by models and specimens in the Peter Redpath Museum and the Macdonald Chemistry and Mining Building. Among the subjects discussed are:—crystallography;

physical properties of minerals dependent upon light, electricity, state of aggregation, etc.; chemical composition, calculation of mineral formulæ, quantivalent ratios, etc.; principles of classification, description of species.

Two hours a week. Mr. Graham.

3. DETERMINATIVE MINERALOGY.—Laboratory practice in blow-pipe analysis and its application to the determination of mineral species. This work is carried on in the laboratory provided for the purpose in the Chemistry and Mining Building.

Two afternoons in first term.

Mr. Graham and Mr. Stansfield.

Fourth Year.

4. MINERALOGY (In continuation of No. 2).—Description of species, particular attention being paid to those which are important as rock constituents and to the economic minerals of Canada; measurement of the angles of crystals with the reflection goniometer; projection of crystal forms, calculation of axial ratios of crystals; drawing of crystal forms; use of the polarising microscope; axial angle apparatus, etc.

First term, two hours a week. Mr. Graham.

5. PETROGRAPHY.—The modern methods of study employed in petrography are first described, and the classification and description of rocks are then taken up.

One lecture a week during the first term. One afternoon a week throughout the year will be devoted to special microscopical work in the Petrographical Laboratory. Dr. Bancroft, Mr. Graham and Mr. Stansfield.

Text-book:—Harker, Petrology for Students.

Books of Reference:—Rosenbusch, Microskopische Physiographie, and Zirkel, Lehrbuch der Petrographie.

6. A. PALÆONTOLOGY.—An extension of the palæontology of Course 2, with special studies of some of the more important groups of fossils.

One lecture a week during the second term and one demonstration a week, with special studies in the Peter Redpath Museum. Mr. Stansfield.

Books of Reference:—Nicholson and Lydekker, Manual of Palæontology; Zittel & Eastman, Text-Book of Palæontology.

or

6. B. PHYSIOGRAPHY.—A description of land forms with reference to their origin, classification, drainage, development, climatic and human controls.

The physical features of Canada will be described during the latter half of the course.

The course will consist of lectures, demonstrations, and laboratory work, and will be illustrated by maps, models, and lantern slides.

Two hours a week during the first term. Dr. Bancroft.

Books of Reference:—Davis, Physical Geography; Mill, The International Geography.

7. ORE DEPOSITS AND ECONOMIC GEOLOGY.—The nature, mode of occurrence and classification of ore deposits will first be taken up. A series of typical occurrences will then be described and their origin discussed. The more important non-metallic materials—*e.g.*, fuels, clay, abrasive materials, building stones, etc., will be similarly treated, as well as questions of water supply, artesian wells, etc.

The course will be illustrated by maps, models, lantern slides, and specimens.

Four lectures a week throughout the second term. Dr. Adams.

Text-books:—Geikie, Outlines of Field Geology; Kemp, Ore Deposits of the United States and Canada; Phillips and Louis, A Treatise on Ore Deposits; Beck, Ore Deposits.

Books of Reference:—The Reports of the Geological Survey of Canada and the Monographs of the U. S. Geological Survey.

8. ECONOMIC GEOLOGY.—This course is a continuation of the general geology of the third year and commences with the consideration of the structural features of the earth's crust, resulting from sedimentation, folding, faulting, the various phases of igneous intrusion, etc., with special reference to engineering problems. A discussion of the methods employed in carrying out geological and magnetic surveys and in the construction of geological maps and sections, as well as the interpretation of these, is then taken up.

One lecture a week throughout the first term. Dr. Bancroft.

9. CANADIAN GEOLOGY. — A general description of the geology and mineral resources of the Dominion.

One lecture a week during the first term. Dr. Bancroft.

Text-book:—Dawson, Hand-book of Geology.

Books of Reference:—The Reports of the Geological Survey of Canada.

10. GEOLOGICAL COLLOQUIUM.—A discussion each week of some geological topic, references to the literature of which have been given in the week preceding. The course is intended to give students some acquaintance with geological literature, as well as a wider knowledge of the great principles which underlie the science.

One hour a week throughout the year. Dr. Adams, Dr. Bancroft, Mr. Graham and Mr. Stansfield.

11. GEOLOGICAL SURVEY.—Candidates for honours in the fourth year will also undertake, under the direction of the Department of Geology, a geological survey of some suitable area selected for that purpose. This survey will occupy two weeks, and will be made either at the close of the third year or immediately before the opening of the regular work of the fourth year,

as may be arranged by the Professor of Geology. The preparation of a geological map of the surveyed area, the examination of the specimens collected, and the writing of a detailed report upon the area, will form part of the work of the fourth year.

N.B.—A large amount of additional private reading will also be required of candidates for honours.

Honour students of the third year will take courses 2, 3, and 4 and also course 2 under zoology and courses 2 or 3 and 4 under Chemistry; fourth year honour students will take courses 5 to 11, and a half course in botany.

DEPARTMENT OF BOTANY.

PROFESSOR:—FRANCIS E. LLOYD.
PROFESSOR OF MORPHOLOGICAL BOTANY:—CARRIE M. DERICK.
DEMONSTRATOR:————————

ORDINARY COURSES.

Second Year.

1. PLANT BIOLOGY.—A course in the general principles and methods of study of morphology, classification and physiology.

This course together with that in animal biology constitutes the course in elementary biology.

Two lectures and two laboratory periods each week, during the second half of the session.

Third Year.

2. SPECIAL MORPHOLOGY OF THE THALLOPHYTA.

(*a*) *Algæ* (first term).

Selected types are used to illustrate the origin of organs, the origin and differentiation of sex, the division of labour and the general laws of development. As far as possible, living material is provided, cultures of algæ found in the vicinity of Montreal being maintained in aquaria throughout the session.

(b) *Slime-moulds, bacteria, fungi and lichens* (second term).

Living material is provided and cultures are made in the laboratory. Preserved specimens furnish other illustrative material. This course is especially useful to those intending to study medicine, forestry, or agriculture.

Two lectures and two laboratory periods, each week throughout the session.

Fourth Year.

3. SPECIAL MORPHOLOGY OF THE BRYOPHYTA, THE PTERIDOPHYTA AND THE SPERMAPHYTA.

The study of a series of types, illustrating the structure, origin, relationships and adaptations to environment of liverworts, mosses, ferns, horsetails, club mosses and seed plants. The necessary material is obtained from local horticulturists, or from the large stock of preserved specimens.

Two lectures and two laboratory periods each week throughout the session.

Third or Fourth Year.

4. HISTOLOGY AND ANATOMY, from the physiological point of view. Microscopic technique.

(*a*) Microphysics and microchemistry of the living cell; origin and development of tissues.

(*b*) Structure from the ecological point of view.

(*c*) Definitive histological and anatomical structure, with especial attention to the use of methods for the determination of crude drugs, foods and adulterants.

(*d*) The structure involved in and the physiology of secretions, with reference especially to certain plant products such as rubber, waxes, gums, resins. Woods and fibers as here considered.

Partial course (*a*) is introductory to any of the lines of work indicated in the subsequent paragraphs; (*b*) to (*d*) inclusive indicate the possibility of adapting the second half year's work to the special needs of students who may be preparing themselves for teaching or for technical work.

Four laboratory periods weekly, occasional hours being taken for colloquia.

HONOUR COURSES.

(*In Biology.*)

Third Year.

For work in Zoology, see page 162.

5. GENETICS.

Candidates for honours in the third year will, in addition to the ordinary work in botany of that year, follow a course of readings and write themes upon selected topics. One lecture and one colloquium or demonstration each week throughout the session.

Fourth Year.

6. PLANT PHYSIOLOGY.

General physiology of the cell, followed by special physiology, studied by critical methods.

Candidates for honours in the fourth year will, in addition to the ordinary work in botany, take plant physiology.

Two lectures and two laboratory periods each week throughout the session, together with selected readings.

Graduate courses leading to the degrees of M.Sc. and Ph.D. can be arranged to meet the special needs of candidates who may present themselves.

DEPARTMENT OF ZOOLOGY.

PROFESSOR:—ARTHUR WILLEY.
ASSOCIATE PROFESSOR OF HISTOLOGY AND EMBRYOLOGY:—J. C. SIMPSON.
LECTURER:—J. STAFFORD.

Second Year.

1. ELEMENTARY ZOOLOGY.

This course consists of a study of the principles of zoology as illustrated by a selected series of types.

Two lectures and two demonstrations a week up till Christmas.

This course, taken along with the corresponding course in botany, constitutes the course in general biology.

Third Year.

2. GENERAL ZOOLOGY.

This course consists of a general review of classes of the animal kingdom.

Two lectures and two demonstrations a week throughout the session. Dr. J. Stafford.

Continuation Courses.

Fourth Year.

3A. Experimental Zoology.

This course includes general histology and a study of the principal types of vertebrate animals.

Two lectures and two demonstrations a week throughout the session.

3B. Comparative Embryology.

This course consists of a study of the typical form of development and of its principal modifications in the animal kingdom.

Two lectures and two demonstrations a week throughout the session. Professor Simpson.

Students desiring to continue the study of zoology during the fourth year may take either of the above courses.

Honour Courses.

Third Year.

Students proceeding to honours in biology shall take, during the third year, in addition to course 2, a series of special readings under the supervision of the professor, with weekly colloquia.

One lecture and one demonstration per week.

During the fourth year students proceeding to honours shall take courses 3A and 3B. For students proceeding to the degrees of B.A. and M.D. in eight years, the anatomy of first year Medicine may be substituted for 3A.

A special fee of $2.50 is charged against the caution money of each student attending the zoological laboratory, in order to cover the cost of instruments and laboratory note-book, which are supplied to him and become his property. A student attending the laboratory for a second time is not called on to pay this fee.

THE UNIVERSITY SCHOOL OF COMMERCE.

The University School of Commerce has been established at McGill University in order to meet the special requirements of young men who propose to enter upon a business career. It has been found by experience that there are, at the present time, a great many young men whose intention it is to go into business, but who are anxious to attain a higher standard of acquirement, both in general education and special study, than that imparted by the programme of studies in an ordinary academy or high school. Such persons do not find it to their advantage to pursue the full course of four years in any of the Faculties of the University, which aim specially at preparation for a professional rather than a business career. The programme of the University School of Commerce is designed, therefore, to combine an essentially practical education with such an amount of general culture as it is fitting that every business man should have. It is believed that a sound training in the essential branches of liberal education affords the best equipment for the conduct of practical affairs. With this end in view, the main object of the work undertaken in the school is rather to develop capacity than to impart special information. But while adhering to this general plan, the studies of the School of Commerce are differentiated somewhat from the kindred curriculum in Arts. Particular stress is laid upon those subjects, a knowledge of which is necessary for business men, while the character of the instruction, and the class methods adopted are specially suited for the end in view. Very great emphasis is laid upon teaching the student to read and write with fluency and accuracy, and to be able to apply a ready intelligence to practical business problems. Facilities are afforded for the student to receive a training in such modern languages (French, German, Spanish) or in such

branches of natural science (chemistry, botany, physics) as may be useful to him in the particular department of business life which he intends to enter.

The University School of Commerce offers, in the first place, a systematic course of study which extends over two years, and the successful completion of which is recognized by the award of a University Diploma. A certain number of these classes are carried on in connection with the regular work of the Faculty of Arts, in order that the standard of the School of Commerce may be maintained parallel with and equivalent to that of the regular Faculties of the University; but in recognition of the fact that the student about to enter upon a business career requires a training adapted to his particular needs, the major part of the work, even where the subjects are of a cognate character to those of the Faculty of Arts, is carried on in separate classes. The purely technical work (such as instruction in accountancy, commercial law and practical economics) is given in classes formed for that purpose alone, and to which only members of the School of Commerce are admitted. The same is true of the more directly practical part of the work in English.

In addition to the full two-year course leading to the Diploma, the work of the School of Commerce comprises also certain classes, which are recognized as Extension Classes, and which are thrown open, either singly or in a group, to any young man whose general education and credentials are considered satisfactory by the University. All those classes are held during evening hours in accordance with the schedule appended below. It will be noticed that students who find themselves able to attend only such classes as are held in the evening will nevertheless receive instruction in the most practical parts of the curriculum that are offered. Students who attend any one or more of these evening classes may receive, upon passing a special examination, a diploma in recognition of the work that they have accomplished.

PROGRAMME OF STUDIES.

The Two-Year Diploma Course.

FIRST YEAR.

Obligatory.

1—**English** (Special Course).
2—**History and Government.**
3—**Mathematics** (Special Course).
4—**Political Economy** (Evening Class).
5—**Accountancy.**

(*Optional* (*One must be taken*).

1—**French.**
2—**German.**
3—**Chemistry** (with laboratory).
4—**Physics** (with laboratory.

In each of the above subjects the work done is as far as possible of a practical character. The instruction in English includes a constant drill in letter writing, essay writing, and the drawing up of reports. As it is considered extremely important that all young men should learn to express themselves in public without the difficulties which come from inexperience, a special training will be given in such oral presentation of various topics as may serve as an initiation in public speaking. The course in French aims especially at imparting facility in the spoken and written language. It includes the teaching of the practical terms and phrases in which business correspondence is carried on in French. Similar facilities are offered students who desire a training in the German or Spanish languages. The instruction in mathematics is designed to be of an entirely practical character. In addition to commercial arithmetic and the necessary elements of algebra, students are taught to handle tables of interest, percentage, etc., to understand the operation of the slide rule; and, in general, to acquire those ready methods of computa-

tion which are useful in practical life. The work in chemistry and other natural sciences, while giving a grounding in the principles of the subjects, is designed to show the application of these principles in modern industrial operations. The course given in the first year in political economy is intended as a general foundation in the subject, to be utilized in special studies later on. The course in accountancy is purely technical.

The programme of the second year course follows along the lines thus indicated, the subjects taken up being grouped as follows:—

Obligatory.

1—**English.**
2—**Commercial Law** (Evening Class).
3—**Accountancy.**
4—**Advanced Practical Economics** (in 1913-1914, the ordinary course of the third year).

Optional (*One must be taken*).

1—**French.**
2—**German.**
3—**Mathematics.**
4—**Chemistry.**
5—**Physics.**

Evening Extension Classes.

As indicated above a certain number of the classes in the School will be held in the evening. It is proposed to develop this feature of the work more and more with the general progress which it is hoped will be made in the work of the School. During next session the instruction given in the evening will include the following subjects:

1. Political Economy (Thursday, 7.30 p.m.)
2. Commercial Law (Tuesday, Friday, 7.30 p.m.)

Regulations Regarding Admission.

Students who propose to enter for the full two-year course are subject to the same conditions of admission as those which

obtain for matriculation into the Faculty of Arts, but the Committee of Management may at its discretion admit a student who has not passed the formal matriculation test, provided that his general standing and attainments constitute, in the opinion of the committee, a qualification completely equivalent to the matriculation examination.

Diplomas and Degrees.

Students who complete the two-year course and pass satisgiven in recognition of the work done in the evening classes. Students who complete the two-year course of the Commercial School and who find themselves desirous of continuing their course with a view to obtaining a degree in Arts, may be admitted to the third year in Arts, provided that the number of subjects they have taken among the compulsory and optional courses of the School of Commerce is considered by the Faculty as a satisfactory standing for admission to the third year. Applicants whose standing falls somewhat short of this may make up the difference by passing a special or supplementary examination of the Faculty of Arts.

Fees.

See page 76.

Instruction.

The instruction in the classes in the School is given in part by the regular professoriate of the University and in part by specially qualified persons engaged for work in particular studies.

Arrangements are in progress whereby candidates preparing for the examination prescribed for Chartered Accountants may be admitted to the School of Commerce and some modification of the programme of study may therefore be necessary.

For all further information applicants will kindly address themselves to the Registrar of McGill University.

FACULTY OF APPLIED SCIENCE.

DEGREES AND EXAMINATIONS.

(1) *Degrees.*

The degrees conferred by the University upon such undergraduates of the Faculty as fulfil the conditions and pass the examinations hereinafter stated are, "Bachelor of Architecture (B.Arch.), and Bachelor of Science" (B.Sc.), mention being made in the diplomas of the latter of the particular course of study pursued.

Students who take the Bachelor of Science degree in one of the courses provided by the Faculty may graduate in any of the remaining courses by attending one or more subsequent sessions.

Students who wish to obtain the degrees of B.A. and B.Sc. (Applied Science) in six years, will spend the first three years in Arts before attending any regular classes in Applied Science, except the summer classes referred to below. The student will then enter the Faculty of Applied Science and devote the remaining three years entirely to the work of this Faculty. The special summer courses mentioned take the place of the work in descriptive geometry, drawing (freehand and mechanical) and shopwork, which form part of the regular course of the first year in Applied Science. This work must be taken in two periods of one month each (in the month of September), prior to the regular work of the second and third years in the Faculty of Arts; and must not be taken during the regular session in any of the three years spent in that Faculty.

Every student who intends to take this double course must notify the Dean of the Faculty of Applied Science to this

effect, on or before the close of his first year in Arts (May 1st), and must pay the fee of $50.00 to the Bursar, for the first of his summer schools, before 1st September following.

By a resolution of the Institution of Civil Engineers (England) the holders of the degree of B.Sc., in the courses of civil, electrical, mechanical, and mining engineering, who are desirous of becoming associate members of the Institution are exempted from the examination prescribed for admission.

(2) *Examinations.*

1. Final examinations are held in all lecture subjects. Class examinations, for which credit may be given in the sessional standing, are held from time to time, at the option of the professor.

2. Students who have failed in one or more subjects of the curriculum shall be required to make good their standing by passing:—

(1) The supplemental examinations, *or*
(2) The final examinations in a subsequent session, *or*
(3) Special examinations, which shall be given only under exceptional circumstances and by authority of the Faculty.

3. No undergraduate will be allowed to take instruction in any subject until he has passed the examinations in the necessary pre-requisite subjects, for particulars regarding which see page 263.

4. Failures in drawing room and laboratory subjects may under certain conditions be made good by attendance on special classes during the afternoons of the first six weeks of the following session.

COURSES OF INSTRUCTION.

The instruction in this Faculty is designed to afford a thorough training of a practical as well as a theoretical nature, in the following branches of applied science:—

I.—Architecture.
II.—Chemistry.
III.—Chemical Engineering.
IV.—Civil Engineering and Surveying.
V.—Electrical Engineering.
VI.—Mechanical Engineering.
VII.—Metallurgical Engineering.
VIII.—Metallurgy.
IX.—Mining Engineering.
X.—Railway Transportation.

The regular work of each session in Applied Science will end about the 1st of May, at the close of the sessional examinations. The summer work will be taken during the month of September (see p. 194).

The Faculty advises students to attend the military courses now offered by the University, and has assigned marks to these subjects on the same basis as that adopted for the obligatory subjects of the course. The marks obtained in the examinations on the military course, like those in other optional subjects, will be taken into consideration in determining the standing of the student. Students will be allowed to substitute military engineering for engineering law, or in the Railway Transportation course for physical geography.

The curriculum, as laid down in the following pages, may be changed from time to time as deemed advisable by the Faculty. The work prescribed for the first two years is the

same in all courses, except in the Practical Chemistry and Metallurgy Courses, and in that leading to the degree of Bachelor of Architecture. (Courses I, II and VIII.)

The first two years of the engineering courses (III to VII and IX and X) are mainly devoted to mathematics, mechanics, physics, chemistry, drawing and shopwork, as it is deemed necessary that students in these courses should master the general principles underlying scientific work before commencing the subjects of the professional courses proper.

The subjects of instruction in the engineering courses in these years, and the number of hours per week devoted to each, are as follows:—

FIRST YEAR.

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods* per week		For details see page
		First Term	Second Term	First Term	Second Term	
Algebra	192	5	5	..	..	227
Descriptive Geometry	341	..	..	1	3	218
English	131	2	2	..	..	222
Freehand Drawing	342, 343	..	..	2	..	218
Geometry	191	3	..	..	..	227
Mech. Drawing	211	..	..	1	1	229
Mechanics	194	2	2	..	..	227
Physics	311	2	2	..	..	248
Physics Lab	312	..	..	1	1	248
Shopwork	212, 213, 214	..	..	2	2	230
Trigonometry	193	..	3	..	..	227

* A laboratory period is three hours.

All undergraduate students of the first year, except those in the course of Architecture, who at the close of the first term have failed to obtain an average of 33 per cent. in the following five subjects, viz.:—mechanics, geometry, algebra, physics and descriptive geometry, will be required to withdraw from the Faculty.

In the case of students in the course of Architecture the same rule applies, the five subjects, however, being descriptive geometry, geometry, physics, trigonometry, and architectural drawing.

Any other student whose record is found to be unsatisfactory may at any time be required to withdraw from the Faculty.

SECOND YEAR.

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods* per week		For details see page
		First Term	Second Term	First Term	Second Term	
Anal. Geometry	197	3	..	..	..	228
Calculus	198	3	3	..	..	228
General Chemistry	51	3	3	..	..	208
General Chem. Lab.	52	..	..	1	1	208
Graphical Statics	82	..	..	..	1	212
Mapping	348	..	..	1	1	251
Materials of Construction	81	1	1	..	..	212
Mechanical Drawing	219	..	..	1	1	231
Mechanics	83	..	3	..	..	212
Mech. of Machines	218	3	3	..	..	231
Physics	315	2	2	..	..	249
Physics Lab	316	..	..	1	1	249
Shopwork	220	..	..	1	1	231
Surveying	346	2	2	..	..	250
Surveying Field Work	347	..	..	..	..	251

* A laboratory period is three hours.

Note.—Surveying field work, 4 weeks, beginning September 1st, 1913 See page 194.

For other summer school work see third year tables.

I. Architecture.

The curriculum required for the degree of Bachelor of Architecture extends over four years, and besides work in the Department of Architecture proper, teaching is provided by the Faculties of Arts, Law and Medicine. The work in the three classes in design A, B and C, is independent of the work in the four years, *and good standing in design, class C, must be obtained prior to receiving the degree.*

While the design classes A, B and C are intended to run concurrently with the second, third, and fourth year work respectively, a student in any year, if competent, may be admitted to the higher classes in this subject.

The object of the curriculum in the first year is to impart such general culture, scientific knowledge and skill of hand as will prepare the student to profit by the work of the succeeding years, under the heads of:—

(*a*) Design; (*b*) Aesthetic; (*c*) Archæology; (*d*) Science; (*e*) Construction; (*f*) Professional Practice; (*g*) Drawing.

An essay on an historical or theoretical subject is required in each term from all students following the historical or theoretical courses.

In all courses studio work goes hand in hand with oral teaching, with a view to the practical application of the theory, while at the same time affording opportunity for the acquisition of power in draughtsmanship and practice in design.

The lectures in the third and fourth years are given as far as possible, in the morning, to enable partial students working in offices to avail themselves of the instruction. Such lectures will be found of use to those studying for the R.I.B.A. and the P.Q.A.A. examinations.

An arrangement has recently been concluded between McGill University and the Province of Quebec Association of Architects whereby holders of the Bachelor of Architecture degree are admitted to practice in the Province after spending one year in the office of a member of the Association, and passing an examination in design, instead of having to take the regular prescribed entrance examinations. The office experience may be gained by working in the summer vacations

FIRST YEAR.

SUBJECT	Subject Number	Lectures per week		Draughting Room and other periods* per week		For details see page
		First Term	Second Term	First Term	Second Term	
French	Arts (30)	2	2	..	..	205
General History	Arts (12)	1	1	..	..	202
Trigonometry	Arts (41)	2	2	..	..	203
Geometry	Arts (42)	2	..	..	..	203
Algebra	Arts (43)	..	2	..	..	203
Physics	Arts (20)	2	2	..	..	204
Physics Laboratory	Arts (21)	..	..	1	1	204
English	131	1	1	..	..	222
Architectural Geometry	18	1	1	1	1	206
Elements of Architecture	4	1	1	..	..	200
Architectural Drawing	32	..	..	1	1	205
Freehand Drawing	36	..	..	1	1	206
Modelling	37	..	..	1	1	206
Summer Work	46	..	..	..	..	207

SECOND YEAR.

Design, Grade A	1	..	..	2	2	200
Theory of Architecture	5	1	1	..	..	200
Building Construction	24	1	1	..	..	204
Building Details	25	..	..	2	2	204
General History	Arts (13)	2	2	..	..	202
History of Ancient and Classical Architecture†	14	2	2	..	..	202
Geometry	Arts (44)	3	..	..	..	203
Algebra	Arts (45)	..	3	..	..	203
Graphical Statics	82	..	..	..	1	212
Surveying	346	2	2	..	..	250
Mapping	348	..	..	..	..	251
Ornament and Decoration‡	8&9 or 10&11	..	..	1	1	201
Architectural Drawing	33	1	1	1	1	205
Modelling	38	..	..	1	1	206
Summer Work	46	..	..	1	1	207
Surveying Field Work	347	..	..	..	..	251

* A draughting room period is three hours.

† The courses on Mediæval and Renaissance Architectural History, numbers 15 and 16, are given in alternate years.

‡ Ornament and Decoration courses, numbers 8 and 9, and 10 and 11, are given in alternate years.

THIRD YEAR.

SUBJECT	Subject Number	Lectures per week		Draughting Room and other periods* per week		For details see page
		First Term	Second Term	First Term	Second Term	
Design, Grade B	2	..	..	4	4	200
Theory of Design	6	1	1	..	..	201
Structural Engineering	26	2	2	..	..	204
Structural Detail	27	..	..	1	1	204
History of Mediaeval or Renaissance Architecture†	15 or 16	2	2	..	..	202
Ornament and Decoration‡	8&9 or 10&11	1	1	1	1	201
Perspective	19	..	..	1	1	206
Hygiene	22	2	..	..	..	204
Heating and Ventilation	23	..	1	..	1	204
Architectural Drawing	34	..	..	1	1	205
Modelling	39	..	..	1	1	206
Summer Work	46	..	..	..	..	207

FOURTH YEAR.

Design, Grade C	3	..	..	6	8	200
Theory of Planning	7	1	1	..	..	201
History of Mediæval or Renaissance Architecture†	15 or 16	2	2	..	..	202
History of Modern Architecture	17	1	1	..	..	202
Graphical Statics	28	1	1	..	..	205
Structural Design	29	..	..	2	2	205
Engineering Law	175	1	1	..	..	226
Architectural Practice	31	2	2	..	..	205
Architectural Drawing	35	..	..	1	..	205
Modelling	40	..	..	1	1	206

* A draughting room period is three hours.

† The courses on Mediæval and Renaissance Architectural History, numbers 15 and 16, are given in alternate years.

‡ Ornament and Decoration courses, numbers 8 and 9, and 10 and 11, are given in alternate years.

For summer reading see page 196.

II Chemistry.

The course in Chemistry is arranged to give the student in the first two years a thorough knowledge of the fundamental principles of chemistry and physics, with sufficient mathematics to enable him to understand the theoretical parts of these subjects.

In the two subsequent years chemistry (inorganic, organic, analytical and physical) is taught both in its purely scientific aspects and in its relations to the various departments of commercial work. In the fourth year, students will specialise in either (a) inorganic *or* (b) organic chemistry, as indicated in the tabulated statement below. Special facilities are afforded for the prosecution of graduate research work in various branches of chemistry.

FIRST YEAR.

As in other Engineering Courses. For details, see pages 171 and 172.

SECOND YEAR.

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods* per week		For details see page
		First Term	Second Term	First Term	Second Term	
Analytic Geometry....	197	3	..	..	..	228
Calculus.....	198	3	3	..	..	228
General Chemistry....	51	3	3	..	..	208
Gen. Chemistry Lab..	53	..	..	5	..	208
Inorganic Qualitative Analysis.....	54	..	1	..	..	208
Inorganic Qualitative Analysis Lab.....	55	..	..	..	5	209
Mechanics.....	83	..	3	..	..	212
Physics.....	315	2	2	..	..	249
Physics Lab.....	316	..	..	1	1	249

* A laboratory period is three hours.

THIRD YEAR.

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods* per week		For details see page
		First Term	Second Term	First Term	Second Term	
Engineering Economics	171	..	2	..	..	226
Geology, General	141	2	2	⅓	⅓	223
Inorganic Quant. Analysis	61	1	..	..	..	209
Inorganic Quant. Anal. Lab	62	..	..	6	6	209
Gen. Elementary Metallurgy	261	2	..	..	..	239
Mineralogy	142	2	2	..	..	223
Mineralogy, Determinative	143	..	2	..	..	223
Organic Chemistry	56	3	2	..	..	209
Organic Chemistry Lab	57	..	..	..	2	209
Physical Chemistry	58	..	2	..	..	209

FOURTH YEAR.

Applied Electro-Chemistry	69	2	..	..	..	211
Crystallography (opt.)	151	2	..	1	..	225
Engineering Law	175	1	1	..	..	226
Industrial Chemistry	68	2	2	..	..	211
Physical Chemistry and Lab	66	2	2	2	1	210
Fire Assay	263	..	..	2 (a)	..	239
Adv. Inorg. Chemistry	72	2 (a)	2 (a)	..	..	211
Inorg. Quant. Anal. and Lab	67	..	1 (a)	4 (a)	5 (a)	210
Ore Deposits (opt.)	148	..	4	..	..	224
Organic Chemistry	65	2 (b)	2 (b)	..	..	210
Organic Chem. Lab	...	..	..	6 (b)	5 (b)	210

*A laboratory period is three hours.
For summer schools, see page 194.

III. Chemical Engineering.

The aim of this course is to prepare the student for the duties of managing engineer in a chemical manufactory. As such he must not only be conversant with the chemical processes involved, but he may also be required to design and oversee the construction of new buildings and to direct the installation and use of machinery. Accordingly the course of study combines a considerable amount of engineering with the maximum of chemical training which can be attained without overpressure.

Between the second and third years students taking this course must attend a summer session of four weeks in the chemical laboratories.

In the third year specialisation commences, the time being about equally divided between chemical and engineering studies, and in the vacation between the third and fourth years all students must give at least six weeks to work in some chemical industry or to equivalent laboratory work satisfactory to the Professor of Chemistry.

In the fourth year the engineering studies are completed and the chemical studies which predominate are arranged in two alternative courses to meet the requirements of the students who cannot possibly study more than a few of the very varied chemical industries. These alternative courses fall broadly under one or other of two headings:—(*a*) inorganic (*b*) organic, as indicated in the table below, and one or other of which the student will select. Should a student desire to prepare for an industry which requires more engineering knowledge than is provided in the regular course he may substitute additional engineering subjects for some of the chemical work. Details will be arranged on application to the Faculty through the Professor of Chemistry.

While every effort will be made to supply detailed information as to methods and plant of many of the important industries, and to provide facilities for experimentally carrying out the processes involved, the main aim will be devoted to the study of the principles which underlie economical production.

FIRST AND SECOND YEARS.

As in other Engineering Courses. For details, see pages 171 and 172.

THIRD YEAR.

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods* per week		For details see page
		First Term	Second Term	First Term	Second Term	
Engineering Economics	171	..	2	..	..	226
General Elem. Metall.	261	2	..	..	..	239
Inorg. Quant. Anal.	61	1	..	..	..	209
Inorg. Quant. Analysis Lab.	62	..	..	3	3	209
Mechanics	86	2	..	..	..	213
Mech. Eng. and Lab.	226 and 228	2	2	1	1	
Mineralogy	142	2	2	..	..	223
Mineral., Deter.	143	..	..	2	..	223
Ore Dressing (opt.)	292	..	2	..	..	243
Ore Dress. Lab. (opt.)	293	..	..	..	1	243
Organic Chemistry	56	3	2	..	..	209
Organic Chem. Lab.	57	..	..	..	2	209
Physical Chemistry	58	..	2	..	..	209
Strength of Materials	87	2	2	..	..	213
Strength of Mats. Lab.	88	..	..	..	1	213
Structural Engineering	90	..	1	..	1	214
Summer School, Inorg. Qual. Anal. and Lab.	54 and 55	..	..	..	..	208

FOURTH YEAR

Elements of Elect. Eng	111	2	2	..	..	220
Elect. Eng. Lab.	112	..	..	1	1	220
Engineering Law	175	1	1	..	..	226
Hydraulics	101	1	..	½	..	217
Industrial Chemistry	68	2	2	..	..	211
Phys. Chem. and Lab.	66	2	1	2	1	210
Applied Electro-Chemistry	69	2	..	..	..	211
Electro-Metal. (opt.)	275	..	2	..	..	242
Electro-Metal. Lab. (opt.)	276	..	..	..	1	242
Fire Assay	263	..	..	2 (a)	..	239
Adv. Inorg. Chemistry	72	2 (a)	2 (a)	..	..	211
Inorganic Quant. Anal. and Lab.	67	..	1 (a)	5 (a)	5 (a)	210
Org. Chem. and Lab.	65	2 (b)	2 (b)	4 (b)	3 (b)	210
Biological and Food Chemistry	64	..	2	..	3	210

* A laboratory period is three hours.
For summer schools, see page 194.

IV. Civil Engineering.

In the third year of this course the strength of materials is a principal subject of study. The knowledge of this subject and of mechanics already gained, is applied to simple problems in the analysis of stresses in framed structures, and to the design of foundations, girders, columns, roof-trusses and the like. Courses in surveying extend throughout the second and third years, with summer school sessions for field-work at the beginning of the second, third and fourth years. Courses in railway and municipal engineering run through the third and fourth years.

In the fourth year comprehensive courses are given in geodesy, hydraulics, hydraulic machinery and theory of structures. Much of the time in this year is, however, devoted to the details of bridge design, as it is thought that a thorough knowledge of this subject is a suitable preparation for work in the entire field of structural design.

Facilities are afforded to graduate students who wish to engage in research work in the strength and elasticity of materials and the like, or in more advanced work in structural design than can be overtaken in the undergraduate courses. A post-graduate course in practical astronomy and geodesy will also be provided for any who may desire to specialize in geodetic work.

FIRST AND SECOND YEARS.

As in other Engineering Courses. For details, see pages 171 and 172.

THIRD YEAR.

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods* per week		For details see page
		First Term	Second Term	First Term	Second Term	
Calculus (optional)	201	1	1	..	..	228
Descriptive Geometry	350 and 351	1	1	1	1	218
Eng. Economics	171	..	2	..	..	226
Foundations&Masonry	89	1	..	1	..	214
Geology, General	141	2	2	½	½	223
Mapping	355	..	..	2	2	254
Mechanical Eng	226	2	2	..	..	232
Mechanical Eng. Lab	228	..	..	1	1	233
Mechanics	86	2	..	..	..	213
Municipal Engineering	91	1	1	..	..	214
Railway Engineering	372	2	2	..	..	254
Strength of Mats&Lab	87 and 88	2	2	..	1	213
Structural Engineering	90	..	1	..	1	214
Surveying	353	2	2	..	..	250
Surveying Fieldwork	354	..	..	..	..	251

FOURTH YEAR.

Bridge Design	96	2	2	2	2	216
Elements of Electrical Engineering	111	2	2	..	..	220
Electrical Eng. Lab	112	..	..	1	1	220
Electric Railways	389	..	2	..	..	257
Engineering Law	175	1	1	..	..	226
Geodesy	359	2	..	..	..	251
Geodetic Laboratory	360	..	..	1	..	252
Geodetic Fieldwork	361	..	..	..	..	251
Hydraulics	97	2	..	..	..	216
Hydraulic Laboratory	98	..	..	1	..	216
Hydraulic Machines	99	..	2	..	..	216
Municipal Engineering	100	..	2	..	..	217
Railway Engineering	388	2	..	..	..	257
Strength of Materials	95	1	1	1	1	215
Theory of Structures	94	1	2	1	2	215

* A laboratory period is three hours.
For summer schools, see page 194.

V. Electrical Engineering.

The electrical studies of the third year embrace a consideration of current flow; the principles of electro magnetism; electrical measurements; the design and action of electrical machinery.

The fourth year is devoted principally to electrical work, and includes lectures and laboratory work on variable and alternating current phenomena, the principles of action and the design of electrical machinery, electric lighting and systems of power distribution, central station design and operation, urban and interurban railways, hydro-electric power development, electro-chemistry and electro-metallurgy.

Occasional visits are made to electrical works and plants.

FIRST AND SECOND YEARS.

As in other Engineering Courses. For details, see pages 171 and 172.

THIRD YEAR.

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods* per week		For details see page
		First Term	Second Term	First Term	Second Term	
Electrical Engineering	113	2	2	..	..	219
Electrical Engin. Lab.	114	1	1	2	2	219
Calculus	201	1	1	..	..	228
Machine Design	225	2	2	..	..	232
Mechanical Drawing	232	..	..	1	1	234
Mech. Eng. and Lab.	223 and 226	2	2	2	1	232
Mechanics	86	2	..	..	..	213
Mech. of Mach.	224	2	2	⅓	⅓	231
Physics	320	1	1	..	..	249
Physics Lab.	321	..	..	2	2	249
Strength of Mats&Lab.	87 and 88	2	2	..	1	213
Sum.Sch. Mech. Draw.	230	..	..	..	..	234
Sum. Sch. Shopwork	233, 234	..	..	..	..	234
Summer Sch. Physics	317	..	..	..	..	249

FOURTH YEAR.

Applied Elec.-Chem.	69	2	..	..	..	211
Electro-Metallurgy	275	..	2	..	..	242
Electrical Designing	122	2	2	1⅓	1⅓	221
Electrical Engineering	117	3	3	..	..	220
Elect. Engineer'g Lab.	118	2	2	3	3	220
Elect. Light and Power Distribution	120	2	..	1	..	221
Electric Traction	121	..	2	..	1	221
Hydraulics	97	2	..	..	..	216
Hydraulics Lab	98	..	..	1	..	216
Machine Design	243	2	..	..	..	236
Thermodynamics	229	2	2	..	..	233

* A laboratory period is three hours.
For summer schools, see page 194.

VI. Mechanical Engineering.

The subjects of instruction in this Department are of interest to students who are likely to take up work connected with—

(*a*) The constructive or manufacturing side of mechanical engineering, including industrial or production engineering; (*b*) steam engineering; (*c*) gas engine and producer work; (*d*) power plant engineering; (*e*) heating and ventilation of buildings and factories; (*f*) locomotive engineering; (*g*) marine engineering and ship propulsion.

Courses are given during the third and fourth years in mechanical engineering as applied to questions connected with power installations and prime movers. The earlier portion of this work is supplementary to the instruction given in thermodynamics, mechanics of machines and machine design, and leads up to the more advanced or technical subjects of power plant design, industrial plant design, works, organization, locomotive engineering and marine engineering.

Students in the Department of Mechanical Engineering take systematic work in electrical engineering during the third year.

Instruction in workshop practice is given in each of the four years. This work is of a systematic nature, and is intended to prepare for, but by no means to replace, that practical experience of manufacturing operations on a commercial basis which every mechanical engineer must obtain for himself.

The course in thermodynamics deals more particularly with the theory of heat engines, and time is assigned for additional graphical and experimental work in connection with the subject.

Arrangements are made for occasional visits to power plants and manufactories of importance.

FIRST AND SECOND YEARS.

As in other Engineering Courses (see pages 171 and 172), with additional course in September for second year (page 194).

THIRD YEAR.

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods* per week		For details see page
		1st Term	2nd Term	1st Term	2nd Term	
Eng. Economics	171	..	2	..	..	226
†Engineering Law	175	1	1	..	..	226
Elements of Elect. Eng	111	2	2	..	..	220
Elect. Eng. Lab	112	..	..	1	1	220
Machine Design	225	2	2	..	..	232
Mechanical Drawing	231	..	..	2	1	234
Mechanical Eng.& Lab	227 and 228	3	3	1	1	232
Mechanics	86	2	..	..	..	213
Mechanics of Machines	224	2	2	½	⅓	231
Shopwork	235, 236	..	..	1	1	234
Shop Processes and Management	237	1	1	..	..	235
Strength of Mats&Lab	87 and 88	2	2	..	1	213
Structural Engin'r'g	90	..	1	..	1	214
Thermodynamics	229	2	2	..	..	233
Sum. Sch. Mech. Draw	230	..	..	..	..	234
Sum. Sch. Shopwork	233, 234	..	..	..	..	234
Sum. Sch. Physics	317	..	..	..	..	249

FOURTH YEAR

Designing	241	..	..	1	1	236
Experimental Eng	257	1	1	..	5	237
Hydraulics and Lab	97 and 98	2	..	1	..	216
***Hydraulic Mach	99	..	2	..	..	216
***Man. Plant Design	253	..	2	..	1	238
Machine Design	242	2	2	..	..	236
Power Plant Design	244	1	1	1	1	236
**{Heat, and Vent. of Buildings	247	1	1	..	..	237
**{Locom. Eng	245	1	1	..	..	236
**{Marine Engineering	246	1	1	..	..	236
Mech. Eng. Lab	249	..	..	3	3	237
Mech. of Mach	240	2	2	⅓	⅓	235
Works Organization and Accounting	254	1	1	..	..	238
Shopwork	252	..	..	1	1	238
Thermodynamics	251	2	2	..	..	237

*A laboratory period is three hours. **One of the three subjects must be taken. ***Either course 253 or 99 can be taken, but not both. †Optional with military engineering, see page 170. For summer schools, see page 194.

VII. Metallurgical Engineering.

This course is designed for students intending to enter metallurgical works such as iron or steel works or smelters. It includes instruction in the engineering, chemical and metallurgical studies required by practising metallurgists.

A certain amount of mining is included in the third year curriculum in order to show the relation between mining and metallurgy; but the course is not intended for students wishtural, and business engineering.

Students who wish to specialize on the chemical side of metallurgy are recommended to select Course VIII.

In the third year of the Metallurgical Engineering Course instruction is given in chemistry, assaying, geology, mineralogy, metallurgy, mining, ore-dressing, and mechanical, structural, and business engineering.

Between the third and fourth years there is a summer school in metallurgical works.

In the fourth year instruction is given in chemistry, electrical engineering, law, hydraulics, metallurgy and ore-dressing. Metallurgical designing and laboratory work form important parts of the course. The laboratory work is partly metallurgical and partly ore-dressing, in the first term, and in the second term a special piece of experimental work is undertaken by each student.

FIRST AND SECOND YEARS.

As in other Engineering Courses. For details, see pages 171 and 172.

Before the third year there is a four weeks' summer school in qualitative analysis in the chemical laboratory, beginning about the first of September.

THIRD YEAR.

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods* per week		For details see page
		1st Term	2nd Term	1st Term	2nd Term	
Engineering Economics	171	..	2	..	..	226
Fire Assaying, Part I..	263	1	..	2	..	239
Geology, General.....	141	2	2	½	½	223
Gen. Element. Metall.	261	2	..	..	..	239
Inorg.Quan.Anal.&Lab	61, 62	1	..	2	..	209
Mech. Eng. & Lab....	226, 228	2	2	1	1	232
Metal. Calculations...	265	1	1	..	..	240
Metal. Colloquium....	266	1	1	..	..	240
Metallurgical Lab....	262	..	..	..	2½	239
Mineralogy.....	142, 143	2	2	2	..	223
Mining Engineering...	291	..	2	..	..	243
Ore Dressing and Lab.	292	2	2	..	½	243
Strength of Materials and Laboratory.....	87, 88	2	2	..	1	213
Structural Engineering	90	..	1	..	1	214
Summer School Inorg. Qual. Anal. and Lab.	54, 55	..	..	..	..	208

FOURTH YEAR.

Elem. Elect.Eng.&Lab	111, 112	2	2	1	1	220
Electro-Metal. & Lab.	275, 276	..	2	..	1	242
Engineering Law.....	175	1	1	..	..	226
Fire Assaying, Part II.	264	..	..	2, alt.	..	239
General Metallurgy...	271	2	2	..	..	240
Hydraulics.....	101	1	..	½	..	217
Industrial Chemistry..	68	2	..	..	..	211
Inorganic Quant. Anal.	67	1	..	4	..	210
Metallurgy.....	272	3	3	..	..	241
Metallurgy Colloquium.....	277	1	1	..	..	242
Metal. Lab.....	274	..	..	1	3	241
Metal. Mach. &Design	278	..	..	1	2	242
Ore Dressing.....	299, 300	3	..	½	..	244
Ore Deposits & Economic Geology.....	148	..	3	..	..	224
Sum.Sch.Metal Works.	267	..	..	..	..	240

*A laboratory period is three hours.

Note.—Metallurgical works, at end of third year—see fourth year tables.

For summer schools, see page 194.

VIII. Metallurgy.

This course is designed for students who intend to devote their attention mainly to the chemical side of metallurgy with the object of becoming analytical or consulting metallurgical chemists. The first two years are the same as in the Chemistry Course. In the third and fourth years instruction is given in analytical chemistry and assaying, theoretical inorganic and electro-chemistry, metallurgy, mineralogy, geology, ore-dressing and mechanical engineering. Certain alternative subjects are offered in the fourth year.

FIRST YEAR.

As in other courses. For details, see page 171.

SECOND YEAR.

As in Course II, Chemistry. For details, see page 172.

Before the third year a summer school in fire-assaying is given. This will be held in September. For details, see subjects 263 and 264.

THIRD YEAR.

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods* per week		For details see page
		First Term	Second Term	First Term	Second Term	
Engin. Economics	171	..	2	..	..	226
Geology, General	141	2	2	⅓	⅓	223
Gen. Element. Metal.	261	2	..	..	..	239
Inorg. Quant. Anal. & Lab.	61, 62	1	..	4	4	209
Mech. Eng. & Lab.	226, 228	2	2	1	1	232
Metal. Calculations	265	1	1	..	..	240
Metal. Colloq. & Libr'y	266	1	1	⅓	..	240
Metallurgical Lab.	262	..	..	..	2½	239
Mineralogy & Lab.	142, 143	2	2	2	..	223
Ore Dressing & Lab.	292	2	2	..	½	243
Physical Chemistry	58	..	2	..	..	209

FOURTH YEAR.

Electro-Chemistry	69	2	..	1	..	211
Electro-Metal. & Lab.	275, 276	..	2	..	1	242
Engineering Law	175	1	1	..	..	226
General Metallurgy	271	2	2	..	..	240
Industrial Chemistry	68	2	..	..	..	211
Inorg. Chemistry (alt.)	72	2	2	..	..	211
Inorg. Quant. Anal.	67	1	..	3	2	210
Metallurgy	272	3	3	..	..	241
Metallurgy Colloquium	277	1	1	..	..	242
Metal. Lab.	279, 274	..	..	3	2	241
Metal. Mach. & Design	278	..	..	..	2	242
Ore Dressing & Lab.	299, 300	3	..	½	..	244
Ore Deposits & Economic Geology (alt.)	148	..	3	..	..	224
Petrog. and Lab. (alt)	147	1	..	..	..	224
Sum. Sch. Metal. Works	267	..	..	..	..	240

*A laboratory period is three hours.

NOTE:—Metallurgical works, at end of third year—see fourth year tables.

Subjects 72, 147 and 148 are alternative; one of the three being required.

IX. Mining Engineering.

Specialization does not begin until the third year, when elementary courses in both mining and metallurgy are given, and a thorough course in fire assaying, but the chief work is in such fundamental subjects as applied mechanics, mechanical engineering, chemistry, geology, and mineralogy.

The fourth year, on the other hand, is very largely given up to detailed work in mining, ore-dressing, economic geology, metallurgy and general engineering, and two elective alternative lines of study are offered, both including the essential subjects of the course and both leading to the degree in Mining Engineering, but each permitting of a considerable amount of specialization.

These alternative or sub-courses are:

(*a*) Mining Engineering and Geology.
(*b*) Mining and Metallurgical Engineering.

The details of these sub-courses are clearly shown in the tabular statement of the fourth year work following, and students are required to choose which one they will take before the close of their third year.

In all cases the fourth year work includes the equivalent of at least three full days per week in the laboratories and drafting room of the mining department, and in the second term each student is required to prepare a thesis giving the result of an extended individual experimental investigation.

A field school in mining, ore dressing and geology is held between the third and fourth years, the work ordinarily beginning immediately after the close of the April examinations, and from four to six weeks are spent in travel, during which a number of mines and concentrators are visited and critically studied under the direction of the departmental staff. Attendance on this school is obligatory except in the case of men who can show evidence of having taken advantage of equivalent opportunities elsewhere.

At the close of the field school all students are expected to take work as labourers, etc., in mines or mills for the remainder of the summer as a certain amount of experience of this character is considered essential.

FIRST AND SECOND YEARS.

As in other Engineering courses. For details, see pages 171 and 172.

THIRD YEAR.

SUBJECT	Subject Number	Lectures per week		Labor tory, etc.. periods* per week		For details see page
		1st Term	2nd Term	1st Term	2nd Term	
Engineering Econ.....	171	..	2	..	..	226
Fire Assaying.....	263	1	..	2	..	239
Geology, General.....	141	2	2	⅓	⅓	223
Inorg.Qual.Anal. &Lab.	59 and 60	1	1	..	2	209
Mine Mapping.....	295	..	..	1	..	243
Mech. Eng. & Lab.....	226 and 228	2	2	1	1	232
Gen. Element. Metall..	261	2	..	..	½	239
Mineralogy.....	142	2	2	..	..	223
Mineralogy, Determin..	143	..	..	2	..	223
Mining Engineering....	291	..	2	..	..	243
Ore Dressing & Lab....	292 and 293	2	2	..	½	243
Strength of Mats. &Lab.	87 and 88	2	2	..	1	213
Struct. Engineering....	90	..	1	..	1	214
Surveying.....	352	2	..	..	..	250
Surveying Field Work..	354	..	..	..	..	251

FOURTH YEAR.

Elem·of Elec.Eng.&Lab.	111 and 112	2	2	1	1, alt. (b)	220
Engineering Law.....	175	1	1	..	..	226
Geology of Canada....	149	1	..	..	..	225
Geology. Historical....	152	1, alt. (a)	1, alt. (a)	..	1, alt. (a)	225
Hydraulics	101	1	..	½	..	217
Metallurgy, General...	271	2	2 & 1 alt, (b)	..	..	240
Mineral Analysis.....	71	..	..	4	..	211
Mining Engineering...	297	3	3	..	..	243
Mining Mach. & Design	298	..	1 & 1 alt. (b)	..	2	244
Mining Colloquium....	302	..	1	..	..	244
Ore Dep. & Econ. Geol.	148	1	4	..	..	224
Ore Dressing & Milling.	299	†2	..	..	..	244
Ore Dress. & Metal. Lab	300, 273	..	..	½ & 1 alt. (b)	..	244
Ore Dress. Lab.& Thesis	301	..	..	..	3	245
Petrography & Lab....	146	1	..	..	1	224
Petrog'hy Advanced...	147	..	..	1, alt. (a)	..	224
Mining Field School...	294	..	..	..	..	242
Field Geology (alt.) (a)	153	..	..	..	..	225

* A laboratory period is three hours.

† Three hours will be given in this subject in 1913 only.

NOTE:—Mining Field work at end of third year—See fourth year table.

Surveying Field Work, beginning Sept. 1st, 1913. See pages 194 and 251.

X. Railway Transportation.

The courses in the department of railways are designed for students who will enter:—

(1) The Operating Department or Executive Offices.

(2) The Mechanical Department.

(3) The Engineering Department.

The work of the first and second years is identical with that of the other courses in the Faculty of Applied Science; that of the third and fourth years is shown opposite.

Students in the department will, so far as possible, enter the employ of a railway company during the summer vacations, with the intention of continuing their connection with the company after graduation.

MECHANICAL ENGINEERING COURSE.

The work of the first, second and third years will follow that outlined for Mechanical Engineering students (page 185). During the fourth year opportunity will be given for specializing in locomotive construction and operation.

CIVIL ENGINEERING COURSE.

Students in this course will follow that outlined for Civil Engineering students (page 181) and, in addition, will be required to engage in practical work during the vacations under the supervision of the department of railways.

RAILWAY TRANSPORTATION COURSE.

(Operating and Executive.)

First and second years as in other courses. See pages 171 and 172.

THIRD YEAR.

SUBJECT	Subject Number	Lectures per week		Laboratory, etc., periods* per week		For details see page
		First Term	Second Term	First Term	Second Term	
Elements of Political Economy	172	2	2	..	..	253
Engineering Law	175	1	1	..	..	226
English	135	2	2	..	..	253
Freight Service	371	..	2	..	..	254
**Machine Design (alt.)	225	2	2	..	..	232
Mapping	355	..	..	2	2	254
Mech. Eng. Lab.	228	..	..	1	1	233
Mechanics	86	2	..	..	..	213
Ry. Organ. & Acct.	374	1	1	..	..	254
Ry. Engineering	372	2	2	..	..	254
Ry. Mech. Engineering	373	2	2	..	..	254
Strength of Mats & Lab.	87 and 88	2	2	..	1	213
Structural Engineering	90	..	1	..	1	214
**Shorthand (alt.)	375	2	2	..	..	254
Telegraphy	376	..	..	1	1	254
Surveying Fieldwork	354	..	..	..	..	251

FOURTH YEAR.

Accounting	379	1	1	..	..	255
†Conducting Transportation (Alt.)	392	2	2	..	..	258
Elements of Elec. Eng.	111	2	2	..	..	220
Electrical Eng. Lab.	112	..	..	1	1	220
Electric Railways	389	..	2	..	..	257
English	138	1	1	..	..	255
Freight Service	380	..	1	..	..	255
Passenger Service	385	1	..	..	..	256
Physical Geography	150	1	1	..	..	225
Railway Economics	177	2	2	..	..	255
Railway Engineering	388	2	..	..	..	257
Railway Law	176	2	..	..	..	256
Railway Mech. Eng.	386, 387	2	2	1	1	257
Railway Operation	381	2	2	..	..	255
Signals and Interlocking	382, 383, 384	1	1	1	1	256
†Shorthand (Alt.)	390	2	2	..	..	258
Telegraphy	391	..	..	1	1	258

* A laboratory period is three hours.
** 375 or 225 must be taken.
† 390 or 392 must be taken.
For summer courses, see pages 194 and 258.

SUMMER WORK.

1. All undergraduates entering the second year—except those taking the Practical Chemistry Course [Course II], and the Metallurgy Course [Course VIII.]—; all students in the Civil Engineering, Mining Engineering and Railway Transportation courses entering the third year, and students in the Civil Engineering Course entering the fourth year, are required to be in attendance at the Surveying School on the 1st of September, when the field work in surveying and geodesy will commence. (See page 251.)

2. Undergraduates in the Mechanical, Electrical, Chemical and Metallurgical Engineering courses, and in Chemistry and Metallurgy, are required to attend a summer session of four weeks between the second and third years. The work in the first two of these courses is as follows:

Time allotted.

Physics.—Lectures, 8 hours; laboratory, 48 hours.

Shopwork.—Lectures, 4 hours; foundry, 28 hours; smithy, 28 hours.

Mechanical Drawing.—40 hours.

Total.—Four weeks at 39 hours=156 hours.

Courses given. (These courses are subject to slight modifications by the Lecturers.)

Physics.—An extension of the second year course in electricity and magnetism, briefly, as follows: Ohm's Law, electrostatic and electromagnetic units, self and mutual induction, capacity, magnetic flux, strength of field in solenoid, hysteresis effects in iron, exponential curve, time constant, charge and discharge curves of condensers, current in circuit having self induction and capacity, solution of the equation.

Shopwork.—The lectures are explanatory of the work done in the shops, and of the text-books.

Shopwork References.—American Foundry Practice, West, pp. 63-68, 81-84, 101-103, 220-226, 227-233, 343-346; Moulder's Text-Book, West, pp. 66-79, 155-163, 164-168, 179-198,

240-243; Forge Practice, Bacon, pp. 5-6, 19-20, 174-220, 232-239.

Foundry Work.—Moulds requiring a higher degree of skill and judgment than elementary course; special methods of strengthening the mould; coating for smooth surfaces on castings; methods of avoiding defects; cupola charging and operating; core mixtures and core-making; core moulds.

Smith Work.—Tool forging and tempering; making lathe and planer tools; drills and tools for the forge; special welding.

Mechanical Drawing.—Exercises in making dimensional sketches of machine parts, and in preparing working drawings from them.

Examinations are held in physics and shopwork at the close of the school.

Undergraduates in Chemical and Metallurgical Engineering will take courses in qualitative chemical analysis, and those in Chemistry and Metallurgy will take fire assaying. This summer work will commence in 1913 on Monday, the 1st of September.

3. Undergraduates in the Mining and Metallurgical courses are required to attend the summer schools in Mining and Metallurgy, held between the third and fourth years (four to six weeks of field-work). These schools are held in May and June. (See pages 240 and 247.)

4. Particulars of the summer work required of students admitted to the third year from affiliated colleges will be found on page 6.

SUMMER ESSAYS AND SUMMER READING.

SESSION 1913-1914.

1. For Students Entering the Second Year.

All students entering the second year, except those in the Course in Architecture (see below), will be required to read the following English classics:—

Southey's "Life of Nelson."
Lamb's "The Essays of Elia."
Kingsley's "Hereward the Wake."
Dickens' "David Copperfield."
George Eliot's "Adam Bede."
} Everyman's Library.

Students in the course in Architecture must read the following books:—

Bloomfield, Reginald—The Mistress Art. (London, 1908, Edward Arnold.)
Belcher, John—Essentials in Architecture. (London, 1907, Batsford.)

Students in the course in Architecture must also either (a) spend five weeks in the office of an architect or contractor, or (b) prepare thirty-five reasonably large free-hand sketches in any desired medium.

All students will be required to pass an examination in the summer reading at the opening of the session. A maximum of 100 marks will be allowed for this reading.

2. For Students Entering the Third Year.

Students entering the third year, except those in the course in Architecture (see below), may

(a) prepare an essay, or
(b) follow a course of summer reading.

(a) The essay must in all respects follow the specifications laid down in the case of essays submitted by students entering the fourth year, except that it should be somewhat shorter,

consisting of about 2,000 words. All rules and regulations governing the fourth year essays, as set forth below, also apply to the third year essays.

Students in Electrical Engineering, electing to write an essay and who are not engaged during the summer on any engineering, scientific or industrial work which would afford a subject for an essay, may write on one of the following subjects:—

(1) The Application of Electric Power to Industrial Establishments.
(2) Relation between Fundamental, Electrical and Mechanical Units.

Students in Mining Engineering who are for any reason unable to write on some engineering work of which they have personal knowledge will be required to take the summer reading (b) next following.

(b) The summer reading which may be substituted for the summer essay consists of

Shadwell's Industrial Efficiency. (Longmans, Green & Co., 1909.)

The following subjects for essays are suggested as suitable for Mechanical Engineering students who are not engaged during the summer in engineering work:—

(1) Mechanical stokers.
(2) Superheaters and use of superheated steam.
(3) Air compressors.

Students in the course in Architecture are not permitted to submit an essay, but must read the following books:—

Symonds, John Addington—"The Life of Michelangelo Buonarroti" (London, 1893, John Nimmo).
Hirn, Yrjö—"The Origins of Art" (London, 1900, The Macmillan Co.).

Architectural students must either (a) spend five weeks in the office of an architect or contractor, or (b) prepare thirty-

five reasonably large free-hand sketches in any desired medium.

Students will be required to pass an examination in the summer reading at the opening of the session. The same number of marks are allotted for this reading as for the essay.

3. For Students Entering the Fourth Year.

Students entering the fourth year, except those in the course in Architecture (see below), are required to prepare an essay during the summer, to be handed in at the Dean's Office not later than 5 p.m. on Friday, October 10th. A maximum of 100 marks, or nearly 10% of the total marks for the year, is given for these essays.

The essays should be from 2,000 to 5,000 words in length. They should be illustrated by drawings, sketches, and (when desirable)by photographs, specimens, etc.

The *most acceptable subject for an essay* is a critical description of the work on which the student is engaged during the summer, but a description of any engineering, scientific or industrial work with which he is familiar will be accepted.

Students in Electrical Engineering, who are not directly connected with any such work, may write on one of the following subjects:

(a) Long Distance Power Transmission.
(b) Variable Speed Drives for Machine Tools.
(c) The Substitution of Electricity for Steam on Railroads.

Students in Mechanical Engineering, who are not directly connected with any such work may write on one of the following subjects:—

(1) Diesel Engine.
(2) Fire Prevention and Protection in Industrial Plants.
(3) The Comparison of Steam and Producer Gas Engines, as regards cost of operation and reliability and satisfactory operation.

No essay compiled from books alone will be accepted unless the student has obtained in advance the permission of the head of his department to prepare such an essay.

The essays must be well expressed and written in precise, well-chosen, grammatical English. In preparing them advantage may be taken of any source of information, but due acknowledgment must always be made, and they must contain a statement of all authorities and books consulted. In judging of the value of the essays, account will be taken not only of the subject matter, but also of style and literary construction.

All essays when handed in will become the property of the department concerned and will be filed for reference. Students may submit duplicate copies of their essays in competition for the students' prizes of the Canadian Society of Civil Engineers, or of the Canadian Mining Institute.

It is requested that, so far as possible, the essays be written on paper of substantial quality and of a size about 8¼ x 10 inches, as in the case of the theses submitted to the Graduate School. (See page 355.)

Students in the course in Architecture are not permitted to submit an essay, but must read the following books:—

Symonds, John Addington—"Life of Michelangelo Buonarroti" (London, 1893, John C. Nimmo).
Hirn, Yrjö—"The Origins of Art" (London, 1900, The Macmillan Co.).

They will be required to pass an examination on this reading at the opening of the session. A maximum of 100 marks will be allowed for the work.

In addition to this reading students in the course in Architecture must either (a) spend five weeks in the office of an architect or contractor, or (b) prepare thirty-five reasonably large freehand sketches in any desired medium.

SUBJECTS OF INSTRUCTION.

N.B.—The following courses are subject to such modifications during the year as the Faculty may deem advisable.

Department of Architecture.

PROFESSORS:—{ PERCY E. NOBBS. RAMSAY TRAQUAIR.

ASSOCIATE PROFESSOR:—THOMAS W. LUDLOW.

LECTURERS:—{ M. C. J. BEULLAC. PHILLIP J. TURNER. H. M. LAMB.

INSTRUCTOR:—H. HÉBERT.

DEMONSTRATOR:—E. J. MOIR.

A—Design.

At least two terms in each grade in the design classes are required to qualify for the degree.

1. GRADE A. Six problems in composition, the subjects being adapted to simple trabeate treatment, and monumental grouping.

2. GRADE B. Four problems in composition, and sketch problems, the subjects involving simple plans and the grouping of elements.

3. GRADE C. A series of planning problems are set in the first term. In the second term the diploma design for graduation occupies the whole of the time. Mr. Nobbs and Mr. Ludlow.

B.—Aesthetic.

The theoretical courses that follow are intended to develop a sense of critical judgment in the student, and to emphasize the fundamental principles of composition and design.

4. THE ELEMENTS OF ARCHITECTURE (24 lectures).

The five orders of Vignola, the Greek orders, pedestals, pediments, intercolumniation and superposition of orders, arches, vaults, domes, roofs, openings, walls, and stairs. Mr. Ludlow.

5. THE THEORY OF ARCHITECTURE (24 lectures).

Analogies in the arts, proportion, scale, expression, decoration, massing, unity, symmetric and asymmetric grouping, individuality, horizontality and verticality. General rules of composition in plan; architectural acoustics and the æsthetic properties of materials. Mr. Ludlow.

6. THEORY OF DESIGN (24 lectures). (Not given, 1913-14.)

(*a*) *Æsthetic Practice*:—Pure design; the function of ornament; the moral logic of ornamental motif; the material logic of ornamental treatment; evolution of form; the placing of ornament; classification of significant ornament; (*b*) *Æsthetic Theory*:—The history of æsthetic enquiry; the phenomena of perception, pleasure, pain, and expression; the art impulse, and the relation of beauty to the arts; subject, emotional content and medium in works of art; the criteria of excellence. Mr. Nobbs.

7. THEORY OF PLANNING (24 lectures).

(*a*) *Elements of Planning*:—The relation of planning to external composition; dimensions and arrangements, scale, aspect, and prospect; (*b*) *Domestic Buildings*:—Residential architecture of all types, stables, garages, etc; (*c*) *Ecclesiastical Art*:—Church plans in relation to the service; (*d*) *Special Types*:—Fire stations, baths, hospitals, schools, factories, libraries, etc.; (*e*) *Public Buildings*:—Town halls, municipal buildings, court houses, Parliament buildings, large halls. Mr. Nobbs.

ORNAMENT AND DECORATION (48 lectures and 48 drafting periods), 8, 9, 10, and 11.

8. DECORATIVE HERALDRY. The place of heraldry in the arts; the laws of heraldry, heraldic art of different periods; modern practice and tendencies.

9. ORNAMENT IN FORM. Plaster work, terra cotta, stone carving, architectural sculpture, wood carving and furniture design are dealt with historically from the point of view of the evolution of form in distinctive materials influenced incidentally by the prevailing tastes of different periods.

10. Metal Work. Wrought iron work, cast iron work and bronze, beaten metal work in copper, brass and silver are dealt with technically and historically.

11. Colour Decoration. Stained glass, mosaic of various kinds, inlays, the use of coloured materials in external and internal design, mural decoration, and the analysis and construction of pattern are studied in the spirit above set forth. Mr. Traquair.

C.—Archaeology.

12 and 13. General History (72 lectures).

12. The detailed study of the civilization of the early Orient, of Greece, Rome and Byzantium; the mediæval period, feudalism, monasticism, the communes, and the guilds. Dr. Fryer.

13. European History from the fifteenth century; the Renaissance and the Reformation and their results in the sixteenth century; the eighteenth and nineteenth centuries with special reference to France and England. Dr. Fryer.

14. Ancient and Classic Architecture (48 lectures).

The works of the ancient Egyptians, Chaldeans, Assyrians, Persians, the Ionian Peoples and the Greeks, with special attention to the refinement of form in Hellenic art; the architecture of Rome, Byzantium, and the succeeding period, down to 800 A.D. Mr. Traquair.

15. Mediæval Architecture (48 lectures).

The evolution of ecclesiastical architecture in France and England from 800 A.D. to 1500 A.D.; civil and military architecture of the Middle Ages in Europe; the Gothic Schools of Italy, Spain, and the Germanic countries. Mr. Traquair.

16. Renaissance Architecture (48 lectures).

The humanist movement of the 15th century as expressed in Italian architecture from 1400 A.D. to 1600 A.D.; the Renaissance in France and the King Louis Periods; the earlier and later phases of the Renaissance in England and English architecture during the XVIIIth century. Mr. Traquair.

17. Modern Architecture (24 lectures).

The Gothic revival in England; the influence of Pugin, Ruskin and Morris and the Preraphaelites; the Arts and Crafts movement; Shaw and the Free-Classicists; national traditions and exotic styles; taste in Europe during the XXth century; France, Germany and the Scandinavian countries; Russian revivals; Italy; the Secession; municipal development; European and American city plans, park systems, monuments; XXth century influences in America; colonial traditions of New England and the Spanish and French districts; the Beaux Arts influence; the English influences of various kinds; L'Art Nouveau in Europe and America. Mr. Traquair.

D.—Science.

41, 42, 43, 44 and 45. MATHEMATICS (96 lectures in first year and 72 in second).

41. TRIGONOMETRY. Hall and Knight's Elementary Trigonometry to page 210 and chapter 19; nature and use of logarithms (Bottomley's four figure tables). First Year: Both terms. Mr. Davies.

42. PLANE AND SOLID GEOMETRY. The equivalent of Books IV., VI. and XI. of Euclid, with supplementary matter from Hall and Stevens' Euclid. First year: First term only. Mr. Davies.

43. ALGEBRA. Hall and Knight's Elementary Algebra (omitting chapters 40-42 inclusive), or the same subject matter in similar text-books. First year: Second term only. Mr. Davies.

44. GEOMETRY. (*a*) Solid geometry, continuation of the first year; (*b*) geometrical conic sections.

Text-Book—Wilson's Solid Geometry and Geometrical Conics. Second Year: First term only. Mr. Davies.

45. ALGEBRA. Permutations and combinations; binomial theorem; exponential and logarithmic series; interest and annuities; undetermined coefficients; partial fractions; summation of typical series; probabilities, determinants; graphic methods. Second Year: Second term only. Mr. Davies.

Text-Book—Hall and Knight's Higher Algebra.

20 and 21. PHYSICS AND PHYSICS LABORATORY (48 lectures and 24 periods).

The instruction includes a fully illustrated course of experimental lectures on the general principles of physics, embracing the laws of energy, heat, light and sound. Prof. Eve.

346, 347 and 348. SURVEYING. (Full course: 4 weeks field school, 48 lectures and 24 draughting periods, see page 251).

Instruction is provided by the Department of Surveying and Geodesy in the Faculty of Applied Science.

22 and 23. HYGIENE OF BUILDINGS (24 lectures in first term, 12 lectures and working out of one graphical problem in second term).

22. Light and air, water, sanitary plumbing, sewage disposal. First term. Dr. Starkey.

23. The heating and ventilation of buildings. Second term. Mr. McKergow.

E.—Construction.

The second year work covers the ordinary building trades and detailing where calculations of a complicated kind are not involved. The third year work deals with structural problems involving calculation, while in the fourth year, problems in structural design are worked out.

24 and 25. BUILDING CONSTRUCTION AND BUILDING DETAIL (24 lectures, 48 draughting periods).

Building materials, brickwork, masonry, carpentry roofing, etc.; joinery of doors, windows, etc., and the finishing trades, such as plastering, painting and plumbing; underpinning, shoring, centering and forms. General working drawings are prepared, and building works in progress are visited. Mr. Turner.

26 and 27. STRUCTURAL ENGINEERING AND STUCTURAL DETAILING (48 lectures and 24 draughting periods).

Steel Construction:—Ores and manufacture of iron and steel; theory of beams, cases of loading; designing, detailing and shop work of beams; *Columns*:—theory, calculations, eccentric loads; single-sections and built-up steel columns;

cast iron columns, beam box girders, plate girders, calculation; steel frame work for buildings; specifications for and inspection of structural steel work; wind bracing and fire-proofing.

Foundations:—Soils, beds, timber and concrete piles, pile driving and pile driving machinery; foundations on compressive soils; concrete footings, timber spread footings, steel spread footings; masonry footings; loads on buildings; strength of masonry, stability of buildings. Mr. Beullac.

28 and 29. GRAPHICAL STATICS AND STRUCTURAL DESIGN (24 lectures and 48 draughting periods).

Analytical and Graphical Statics.—Analysis of stresses in trusses, graphical statics; design of roof trusses and mill-buildings; theory and practice of reinforced concrete building construction, including floor-slabs, beams, girders and columns; foundations and retaining-walls; theory of masonry arches. Mr. Lamb.

F.—Architectural Practice.

131. ENGLISH COMPOSITION (24 lectures with exercises).

Instruction is provided with the Applied Science first year classes. (See page 222.) Mr. Latham.

30. FRENCH (48 lectures).

Vreeland and Koren, French Syntax and Composition (Holt); Maupassant, Huit Contes Choisis (Heath); Super, Histoire de France (Holt). Mr. Morin.

31. ARCHITECTURAL PRACTICE (24 lectures with exercises).

Structure of specifications and general clauses; specifications for all trades; conditions of contract; agreements; building by-laws; estimates, reports, professional ethics. Mr. Turner.

175. ENGINEERING LAW (24 lectures).

Instruction is provided with the Applied Science fourth year classes (see page 226).

G.—Drawing.

32, 33, 34, and 35. ARCHITECTURAL DRAWING (84 periods of three and four hours).

The work in this course is in direct connection with the lectures in archæology.

32. Measured drawings of the orders are prepared direct from the large scale models in the museum, and existing buildings are surveyed and drawn out. Mr. Ludlow.

33. Restorations from the architectural remains of Greece and Rome, are prepared from the documents in the reference room.

34. Examples of mediæval architecture are studied; sketch plans and elevations of important works are set up and detail drawings are prepared from documents.

35. A special study is made during the first term of Italian Renaissance examples; the XVIth century architecture of France and England and late examples of French or English fully developed Classic are studied. Mr. Traquair and Mr. Moir.

36. Freehand Drawing (24 periods).

Drawing in pencil or charcoal from casts of architectural ornament, architectural fragments and parts of the figure. Mr. Ludlow.

In the second term there may be a class in drawing from the living model, admission to which would be limited to students of advanced standing. Mr. Hébert.

18. Architectural Geometry (24 lectures and 24 periods).

Geometrical Drawing and Descriptive Geometry, with special stress on shades and shadows, in their application to architectural forms and the intersections of geometrical solids. Mr. Ludlow.

19. Perspective (24 periods with occasional explanatory lectures).

The elements of rectilinear perspective and the practical application of the precepts in making perspective drawings of the design problems in hand. Mr. Ludlow.

37, 38, 39 and 40. Modelling (48 periods of two hours extended over the first, second, third and fourth years).

The student first studies form directly from nature, and later on conventionalizes the forms with which he has become familiar for decorative purposes. The Architectural museum affords many examples from different periods of the adaptation and abstraction of natural motifs in ornament. They are used to show the spirit in which to work out ornament, and are not copied directly. Models of designs on which the students are engaged are also prepared, and casting is taught. Mr. Hébert.

46. Summer Work.

During the vacation following the close of the first, second and third years, the students in Architecture are required to read and be prepared to pass an examination on a selected theoretical, æsthetical, or historical architectural work, and in addition to this, to spend at least five weeks' work in the office of some architect or contractor; the period of such employment to be certified by a letter from the employer. For the students who for any reason would find it impracticable to do office work, the substitution of thirty-five reasonably large freehand sketches, rendered in any desired medium, would be considered an equivalent.

Department of Chemistry.

PROFESSOR:—R. F. RUTTAN.
ASSOCIATE PROFESSORS:—NEVIL NORTON EVANS. DOUGLAS MCINTOSH.
ASSISTANT PROFESSOR:—F. M. G. JOHNSON.
LECTURER:—V. K. KRIEBLE.
DEMONSTRATORS:—A. R. M. MCLEAN. OTTO MAASS. J. W. TAIT. R. KIRKPATRICK. R. SKELTON.

Second Year Lectures.

51. GENERAL CHEMISTRY. An introductory course in descriptive and theoretical chemistry. The fundamental laws and theories are studied in conjunction with a detailed description of the preparation, properties and industrial applications of the more important elements and their compounds. Three hours a week. Mr. Evans.

Text-Book:—Alex. Smith's General Chemistry for Colleges.

54. INORGANIC QUALITATIVE ANALYSIS. A course explanatory of the work done in the laboratory (course 55). One lecture a week in the second term. Mr. Evans.

For reference:—Treadwell's Qualitative Analysis.

Second Year Laboratory.

52. GENERAL CHEMISTRY LABORATORY. In this course the student is taught the construction and use of ordinary apparatus and performs a series of experiments designed to cultivate the powers of observation and deduction. Many of these experiments involve accurate weighing. Considerable attention is also devoted to the subject of qualitative analysis. One period a week for all students of engineering.

53. GENERAL CHEMISTRY LABORATORY. An extensive course illustrating the methods adopted in establishing the fundamental laws and in the preparation and purification of inorganic chemicals. Five periods a week in the first term for students of Chemistry and Metallurgy.

55. Inorganic Qualitative Analysis Laboratory. A complete course. Five periods a week in the second term, or (for Chemical and Metallurgical Engineers) its equivalent in the summer school.

Text-Book:—A. A. Noyes' Qualitative Chemical Analysis.

Third Year Lectures.

56. Organic Chemistry. Three lectures a week during the first term.

Text-Book:—Holleman's Organic Chemistry, or Remsen's Organic Chemistry.

58. Physical Chemistry. An introductory course following the development of chemical theory, including vapour densities, molecular weights, the mass law and the phase rule.

Two lectures a week during the second term. Dr. Johnson.

Text-Book:—Theoretical and Physical Chemistry, Bigelow.

59. Inorganic Qualitative Analysis. A course explanatory of the work done in the laboratory. One lecture a week in the second term for Mining Engineers only. Mr. Evans.

Text-Book:—A. A. Noyes' Qualitative Chemical Analysis.

61. Inorganic Quantitative Analysis. A course on the general principles involved in quantitative analysis. One lecture a week during the first term of the third year. Dr. Johnson.

For reference:—Treadwell's Quantitative Analysis.

Third Year Laboratory.

57. Organic Chemistry. A course on the preparation, detection and analysis of the commonest organic compounds. Two periods a week in the second term.

Text-Book:—

60. Inorganic Qualitative Analysis. A course adapted to the requirements of Mining Engineers. Two periods a week in the second term.

62. Inorganic Quantitative Analysis. An extensive course on gravimetric and volumetric methods including gas analysis.

Text-Book:—Clowes and Coleman, Quantitative Analysis, 8th Edition.

64. MINERAL ANALYSIS. A more extended course than 71.

Fourth Year.

64. BIOLOGICAL AND FOOD CHEMISTRY. A course on the constitution and analysis of proteins, carbohydrates, fats and allied substances. The course also includes enzyme action and colloidal chemistry. A course of two lectures per week and three laboratory periods during the second term.

65. ORGANIC CHEMISTRY. A systematic course, comprising two lectures and six laboratory periods a week.

Text-Book:—Perkin and Kippings, Organic Chemistry.

66. PHYSICAL CHEMISTRY. The lectures, which are a continuation of those given during the third year, include the kinetic theory, thermo-chemistry, the principles of thermodynamics as applied to chemical action, osmotic phenomena and their application in deducing the ionisation theory of solutions, a study of such physical properties of gases, liquids and solids as are known to depend on their chemical constitution, and electro-chemistry. Two lectures and two laboratory periods a week in the first term, two lectures and one laboratory period a week in the second term. Dr. McIntosh.

Text-Book:—Findlay's Physico-chemical Measurements.

For reference:—Ramsay's Text-Books of Physical Chemistry.

67. INORGANIC QUANTITATIVE ANALYSIS. The lectures deal with the special methods of analysis of iron and steel, alloys and water. One lecture a week in the second term. Dr. Johnson.

The laboratory work is a continuation of courses 61 and 62 and is adapted both in extent and in subject matter to the needs of individual students, various other courses being allowed as partial alternatives.

For reference:—Olsen's Quantitative Analysis; Blair, Chemical Analysis of Iron; Brearley and Ibbotson, Analysis of Steel Works Materials.

68. Industrial Chemistry. An extensive course on the leading chemical industries. Two lectures a week.

69. Applied Electro-Chemistry. The laws of electrolysis and of solutions are studied from the standpoint of the osmotic theory. Primary and secondary batteries, electro-plating, polarisation and the preparation and electro-chemical behaviour of the rarer elements used in incandescent lamps are discussed. The more important technical processes are studied and typical substances prepared in the laboratory. Two lectures and one laboratory period in the first term. Dr. McIntosh.

For reference:—Le Blanc, Elements of Electro-Chemistry; Blount, Practical Electro-Chemistry.

71. Mineral Analysis. A laboratory course specially designed for Mining Engineers. Four periods a week in the first term.

For reference:—Olsen's Quantitative Analysis.

72. Advanced Inorganic Chemistry. A course of lectures on inorganic chemistry, discussing the elements and their compounds in accordance with the general principles of physical chemistry.

Two lectures a week throughout the session. Dr. Johnson.

Department of Civil Engineering and Applied Mechanics.

PROFESSORS:—H. M. MACKAY. E. BROWN.

ASSISTANT PROFESSORES:—C. BATHO. H. M. LAMB.

LECTURER:—R. DE L. FRENCH.

DEMONSTRATORS:—J. J. MACDONALD. ———— ————

Second Year.

81. MATERIALS OF CONSTRUCTION. Manufacture and properties of cast iron, wrought iron, crucible, bessemer and open hearth steel; principal alloys; considerations governing selection of materials; manufacture and properties of Portland and natural cements; limes; concrete; stone and brick masonry; principal kinds of timber used for engineering purposes; preservation of timber; discussion of standard specifications.

Required of all engineering students.

One hour per week. Prof. MacKay.

82. GRAPHICAL STATICS. Composition of forces; general methods involving the use of funicular and force polygons; determination of reactions, centres of gravity, bending moments and moments of resistance; stresses in cranes, braced towers, roof trusses and bridge trusses. Required of all engineering students. Three hours per week, second term. Mr. Lamb, Mr. Wilson, Mr. McLaren.

83. MECHANICS. The course includes the general principles of statics, and of the dynamics of a particle. Motion of a particle under varying force is considered and a knowledge of both differential and integral calculus is essential. Simple harmonic motion is considered (taking the oscillation of springs and pendulums in illustration), and numerous applications of the principles dealt with are worked out.

Three lectures per week, second term.

Prof. Brown, Mr. Batho and ——.

Text-Book:—Morley, Mechanics for Engineers.

Third Year.

86. MECHANICS. The work of the second year course in mechanics is extended, and the dynamical equations for the motion of a rigid body in two dimensions are deduced. Numerous examples are worked in detail, including problems on fly-wheels, kinetic energy of bodies having translation and rotation, oscillation of a rigid body about a fixed axis of suspension, impulsive forces, etc. The elementary principles of the gyroscope are also considered. Two lectures per week, first term. Prof. Brown and Mr. Batho.

Text-Book:—Morley, Mechanics for Engineers.

87. STRENGTH OF MATERIALS. This course deals with the fundamental principles of the strength of materials. It includes the following:—Stress, strain, resilience, and the elastic properties of materials used in construction; bending moment and shearing force diagrams; strength, curvature, and deflection of beams; continuous beams; cantilever beams and the like; simple problems on rolling loads; reinforced concrete beams; the strength of shafting; spiral springs; bending combined with tension or compression; elementary consideration of compound stresses; distribution of shearing stress on various sections, etc.

Required of all engineering students. Two lectures per week during session. Prof. Brown, Mr. Batho and Mr. Lamb.

Text-Book:—Morley, Strength of Materials.

88. STRENGTH OF MATERIALS LABORATORY. The work is arranged to illustrate the principles of the lecture course in strength of materials (87), and includes the following:—Tension tests of various materials in 100 ton and 30 ton testing machines; determination of stress-strain diagrams by automatic recorders and by extensometers and scales; deflection of beams, wood and metal; torsion of shafts; deflection and vibration of spiral springs, and torsional oscillations of wires; the moment of inertia of fly-wheels by oscillation and falling weight tests; determination of Young's modulus for various materials; complete tests of Portland cement; efficiency of

chain blocks; experiments on tension and twisting of wires; bending combined with torsion as in shafting; together with demonstrations on the large testing machines of tensile tests of various materials, the breaking of timber and reinforced concrete beams and small columns, the compressive strength of concrete, bricks, mortars, etc. Three hours per week, second term. Prof. Brown and assistant staff.

89. FOUNDATIONS AND MASONRY. Borings; bearing power of soils; piles and pile driving; concrete piles; footings; grillages; underpinning; foundations under water; coffer dam, open dredging, pneumatic and freezing processes; estimation of quantities from drawings; estimates of cost.

Required of students in Course IV. Four hours per week, first term. Prof. MacKay, Mr. Lamb, Mr. Macdonald.

Reference Books:—Baker's Masonry Construction; Fowler's Ordinary Foundations.

90. STRUCTURAL ENGINEERING. Problems in the design of beams, plate girders, columns, roof trusses, knee bracing, etc.; working drawings; reinforced concrete; estimates of quantities; estimates of cost. Required of students in Courses III, IV, VI, VII, IX and X. Four hours per week, second term. Mr. Lamb and Mr. Macdonald.

Reference Books:—Ketchum's Mill Building Construction; Freitag's Architectural Engineering; Cambria Steel.

Fourth Year.

91. MUNICIPAL ENGINEERING. (*a*) *Sewage of Cities and Towns.*—The various systems for the removal of sewage; special methods in use for its treatment and ultimate disposal; the proportioning and construction of main, branch and intercepting sewers; inverted syphons and submerged outlets; manholes, flush tanks, catch basins, storm water overflows, etc.; field and office work in connection with preliminary surveys, design, estimates of cost, construction, record plans and management; materials used in construction; (*b*) *Roads and Pavements.*—Methods of construction; cost; durability and desirability of the various kinds of pavements; grades and

cross sections; methods of assessments of costs; methods of maintenance and cleaning. Required of Civil Engineering students. One hour per week. Mr. French.

94. THEORY OF STRUCTURES. The analysis of statically determinate framed structures under fixed and moving loads; distortion of framed structures; swing spans; braced arches and arched ribs with two hinges; hingeless arches in steel, concrete and reinforced concrete; frames with redundant members.

Required of civil engineering students in the fourth year. One lecture and one drafting room period per week, first term; two lectures and two drafting room periods per week, second term. Prof. MacKay, Mr. Lamb.

Reference Books:—Merriman and Jacoby's Roofs and Bridges; Johnson Bryan and Turneaure's Modern Framed Structures; Marburgh, Stresses in Structures; Heller, Stresses in Structures.

95. STRENGTH OF MATERIALS. The course includes the following:—The bending and deflection of beams loaded in any manner; beams continuous over several supports at the same or different levels; distribution of shear and deflection due to shear; principle of work applied to deflection of beams, trussed beams and some statically indeterminate problems; bending of curved bars, and of unsymmetrical sections such as single angles, etc.; elastic strains; relation between elastic constants; strength of thick shells; earthwork theories; suspension cables; the design of floor and column systems for reinforced concrete buildings (including a critical study of standard specifications); retaining walls, etc.

Required of civil engineering students in the fourth year. Two lectures per week during first term, and one per week during second term, with the equivalent of one-half laboratory period per week throughout the session at times appropriate to the progress of the course. Prof. Brown.

Text-Books:—Strength of Materials—Morley; Reinforced Concrete, Taylor and Thompson.

96. Bridge Design. The reasons governing the selection of a particular type of bridge; discussion of the loads to which the bridge will be subjected; calculation of the stress in the several members; determination of the sectional areas and forms of the members; design of the connections; preparation of complete drawings.

Required of students in Civil Engineering. Eight hours per week. Prof. MacKay, Mr. Macdonald.

Reference Books:—Merriman and Jacoby's Roofs and Bridges; Johnson Bryan and Turneaure's Modern Framed Structures; Ketchum's Highway Bridges; Thomson's Typical Steel Railway Bridges; Waddell's De Pontibus.

97. Hydraulics. The fundamental principles of hydraulics are considered, and applied to problems on the discharge of orifices, notches, weirs, pipes and open channels under varying conditions; the theory of impact of jets and its application to turbines is also dealt with. Required of Civil and Mechanical students of the fourth year; alternative course for Electrical and Mining students of the fourth year.

Two hours per week, first term. Prof. Brown.

Text-Book:—Hydraulics and its Applications—Gibson.

98. Hydraulic Laboratory. The course is illustrative of the principles considered in course 97, and is taken concurrently. The work includes the following experiments:—Measurement of discharge from orifices, notches and pipes, both straight and bent, to determine hydraulic coefficients; pressure of jets impinging on vanes; tests of Venturi meter, hydraulic ram, Pelton wheel, Girard impulse turbine, Brotherhood reciprocating motor, etc. Three hours per week, first term. Prof. Brown and assistant staff.

99. Hydraulic Machines. The course includes the application of the principles of hydraulics to the determination of formulæ for the design of turbines and centrifugal pumps. Examples are worked showing the methods of finding the leading dimensions of different types of such machines, and representative machines, methods of regulation, etc., are con-

sidered in detail. The transmission of power by hydraulic pressure is also considered, and the functions of the accumulator are dealt with along with the influence of inertia forces in the operation of such machines as reciprocating motors, pumps, riveters, etc. Two hours per week, second term. Prof. Brown.

Text-Book:—Hydraulics and its Applications—Gibson.

101. HYDRAULICS AND LABORATORY. A short course embodying the hydraulic principles outlined under courses 97 and 98 will be given in the first term. There will be one lecture per week, and four or five laboratory periods at hours to be arranged. Required of Metallurgical and Chemical Engineering students of the fourth year; alternative course for Mining students of the fourth year.

Text-Book:—Hoskins—Text-Book on Hydraulics.

100. WATER SUPPLY. The quantity and quality of water; rainfall and evaporation; storage as related to the supplying capacity of watersheds; combined and separate fire and domestic systems with reference to their requirements as factors in the selection of sources of supply; works for the collection, storage and carriage of water to the point of distribution; natural and artificial purification; the distribution system with location of mains, hydrants, valves, blow-offs, etc.; field and office work in connection with design, estimates of cost, construction, record plans and management.

Required of Civil Engineering students.

Two hours per week, second term. Mr. French.

105. ADVANCED COURSES. Provision will be made if a sufficient number of properly prepared students present themselves for more advanced courses of lectures. During the session 1912-1913 a course was given on "The determination of statically indeterminate and secondary stresses."

Department of Descriptive Geometry and Freehand Drawing.

PROFESSOR:—C. H. McLEOD.
ASSOCIATE PROFESSOR:—H. F. ARMSTRONG.
LECTURER:—A. J. KELLY.
DEMONSTRATORS:—JAMES WEIR.

This course deals with the methods of representing objects on one plane so that their true dimensions may be accurately scaled. It discusses the methods employed in the graphical solution of the various problems arising in engineering design, and deals generally with the principles underlying all constructive drawing. The methods taught are illustrated by applications to practical problems. It is the aim of the work to develop the imagination in respect to the power of mentally picturing unseen objects, and, incidentally, precision in the use of the drawing instruments is attained.

First Year.

341. GEOMETRICAL DRAWING. Problems on straight line and plane; projections of plane and solid figures; curved surfaces and tangent planes; intersections of surfaces; axometric projections; shades and shadows. Mr. Armstrong.

Text-Book:—Geometrical Drawing by C. H. McLeod; McLeod's Elementary Descriptive Geometry.

Third Year.

350. PERSPECTIVE DRAWING. Mathematical perspective and of perspective of shadows, etc.; photographic surveying. First term. Mr. Kelly.

351. MAP PROJECTIONS. Graphical determination of spherical triangles; spherical projections and the construction of maps. Second term. Mr. Kelly.

342. FREEHAND DRAWING. The object of this course is to train the hand and eye so that students may readily make sketches from parts of machinery, etc., either as note book

sketches, diagrams, perspective drawings in light and shade, or as preparatory dimensioned sketches from which to make scale drawings. Mr. Armstrong.

343. LETTERING. Plain block alphabets, round writing, and titles, such as are chiefly in use in draughting offices will be dealt with. In this course, also, tinting, tracing, blue printing and simple map drawing will be included. Mr. Armstrong.

Department of Electrical Engineering.

PROFESSOR:—L. A. HERDT.

ASSISTANT PROFESSORS:—C. V. CHRISTIE. A. GRAY.

LECTURER:—E. GODFREY BURR.

LECTURER:—A. G. L. MCNAUGHTON.

DEMONSTRATORS:—_____ _____

Third Year.

113. ELECTRICAL ENGINEERING. The theoretical consideration of current flow in circuits; the laws of electro-magnetism and of the magnetic circuit; the theory and operating characteristics of direct current machinery; the principles of alternating current machinery. Required of all students in Electrical Engineering.

Two hours per week. Mr. Christie.

114. ELECTRICAL ENGINEERING LABORATORY. Lectures on:—Preparation of reports; construction, handling and protection of electrical apparatus; use of instruments and precision of measurement; predetermination of the characteristics of electrical machinery; special and shop testing.

Tests are made in the laboratory on:—current flow in circuits; metering and controlling devices, generators, motors boosters, balancers and motor generator sets; arc and incandescent lamps; reflectors. These tests are intended to illustrate the principles of action and the limits of the proper use of the apparatus. Required of all students in Electrical Engineering. Lectures, one per week. Mr. Gray. Laboratory, six hours per week.

Students are furnished with special laboratory notes.

111. ELEMENTS OF ELECTRICAL ENGINEERING, for third year students in Mechanical Engineering and fourth year students in Civil and Mining Engineering and Railway Transportation.

A general course in electrical engineering, treating of the laws of electro-magnetism; continuous and alternating current flow in various circuits; characteristics of direct and alternating current machinery; the fundamental principles of electric lighting, power distribution and electric traction.

Two hours per week.—Mr. Gray. First and second terms.

Text-Book:—MSS. notes and data.

112. ELECTRICAL ENGINEERING LABORATORY, for third year students in Mechanical Engineering and fourth year students in Civil and Mining Engineering and Railway Transportation.

Includes tests of direct current metering and controlling devices, dynamos, motors, boosters, motor generators and constant current machines; experiments of variable current flow in circuits; tests of alternators, synchronous motors and converters, induction motors and transformers, etc.

Three hours per week. First and second terms.

Fourth Year.

117. ELECTRICAL ENGINEERING. The treatment of alternating current circuits by vector diagrams and vector equations; the theory and operating characteristics of alternating current machinery. Required of all students in Electrical Engineering. Must be preceded by course 113.

Th ee hours per week. Mr. Christie.

118. ELECTRICAL ENGINEERING LABORATORY. Lectures on:—Industrial measuring instruments; their construction, use and precision; testing of electrical machinery; auxiliary apparatus and materials of construction. Tests are made in the laboratory on alternators, synchronous motors and converters, compensators, induction motors, transformers, frequency and phase changing apparatus, potential regulators, rectifiers, etc. Required of all students in Electrical Engineering. Must be

preceded by course 113, and taken in conjunction with course 117.

First and second terms. Lectures, 2 hours per week. Mr. McNaughton.

Laboratory, 9 hours per week.

Students are furnished with special laboratory notes.

120. ELECTRIC LIGHTING AND POWER DISTRIBUTION. The design and operation of power plants and substations. Transmission and distribution systems are taken up under the following heads:—Selection of generators, transformers, switches and auxiliary apparatus with a study of their characteristics and limitations; wiring diagrams and switchboard design; line design and construction, selection of towers, insulators and conductors, calculation of sags and spans; high voltage and transient phenomena, the protection of overhead lines, cable systems and station apparatus; industrial applications of electrical apparatus; financial considerations. Electric lighting and illumination is taken up under the following heads:—Light and its physiological effects; characteristics of lamps and reflectors; interior and street lighting; lighting systems. This subject is required of all students in Electrical Engineering. Two hours per week, first term. Dr. Herdt. Three hours per week in drafting room, first term.

Text-Book:—Standard Handbook for Electrical Engineers.

121. ELECTRIC TRACTION. Urban, inter-urban and main line electrification is taken up under the following heads:—Choice of system and apparatus; calculation of motor rating and car equipment; overhead and track construction; methods of control, braking and regeneration; storage batteries and boosters; financial considerations.

This subject is required of all students in Electrical Engineering in their fourth year. Two hours per week, second term. Dr. Herdt.

Three hours per week in the drafting room, second term.

Text-Book:—Standard Handbook for Electrical Engineers.

122. ELECTRICAL DESIGN. The electrical design of direct and alternating current machinery. Special attention is paid

to the limitations of the different types of machines and to the preparation of specifications. Required of all students in Electrical Engineering. Lectures, two hours per week. Mr. Gray. Problem work, four hours per week.

Text-Book:—Gray's Electrical Machine Design.

English.

LECTURER:—G. W. LATHAM.

131. ENGLISH COMPOSITION. In view of the importance of accuracy of expression in the case of those engaged in scientific or professional work, a course on English composition is prescribed for all undergraduates of the first year. Students who give evidence of having already reached the required standard of proficiency, by passing a special exemption examination, may be excused from attendance on this course. This special examination will be held in the Molson Hall on Wednesday, October 1st, at 11 o'clock.

Students who are required to take this course will be assigned to a section which will meet weekly for practice and instruction in composition.

Satisfactory results in class and essay work must be obtained before entry into the second year. All undergraduates of the first year, whether exempt or not from attendance on the course, must pass the final examination.

In connection with this course, the following text-books may be used: "Carpenter's Rhetoric and English Composition" (Macmillan); "Woolley's Handbook of Composition" (Heath).

132. ENGLISH SUMMER READING. (See page 196.)

135. ENGLISH. (Department of Railways. See page 253.)

138. ENGLISH. (Department of Railways. See page 255.)

Department of Geology and Mineralogy.

PROFESSORS:—{FRANK D. ADAMS. J. AUSTEN BANCROFT.

ASSISTANT PROFESSOR:—R. P. D. GRAHAM.

LECTURER:—JOHN STANSFIELD.

SESSIONAL LECTURER:—ALFRED E. BARLOW.

Third Year.

141. GENERAL GEOLOGY. The lectures will embrace a general survey of the whole field of geology, and will be introduced by a short course on mineralogy. Especial attention will be devoted to dynamical geology and to historical geology, including a description of the fauna and flora of the earth during the successive periods of its past history, as well as to the economic aspects of the subject.

The lectures will be illustrated by the extensive collections in the Peter Redpath Museum, as well as by models, maps, sections and lantern slides. In addition to the lectures there will be a demonstration each week.

Dr. Adams.

Text-Book:—Scott, An Introduction to Geology.

142. MINERALOGY. The lectures and demonstrations, illustrated by specimens and models, deal mainly with the description and means of identification of species, special attention being paid to the ores and economic minerals and to those which are important as rock constituents. The earlier lectures are devoted to a brief discussion of the geometrical and physical properties of minerals; their chemical composition; calculation of formulæ, etc.; and the principles of classification.

Mr. Graham.

143. DETERMINATIVE MINERALOGY. Laboratory practice in blow-pipe analysis and its application to the determination of mineral species. Mr. Graham and Mr. Stansfield.

Fourth Year.

146. PETROGRAPHY. The modern methods of study employed in petrography are first described, and the classification and description of rocks is then taken up.

In addition to the lectures, one afternoon a week during the second term will be devoted to practical work in the petrographical laboratory.

Dr. Bancroft, Mr. Graham and Mr. Stansfield.

147. ADVANCED PETROGRAPHY. This is a more advanced course than 146. In addition to the lectures an afternoon throughout the year will be devoted to practical work in the petrographical laboratory.

Text-Book:—Harker's Petrology for Students. Dr. Bancroft and Mr. Stansfield. The petrographical laboratory is open to fourth year Mining students.

148. ORE DEPOSITS AND ECONOMIC GEOLOGY. The nature, mode of occurrence and classification of ore deposits will first be taken up. A series of typical occurrences will then be described and their origin discussed. The more important non-metallic materials, *e.g.*, fuels, clays abrasive materials, building stones, etc., will be similarly treated as well as questions of water supply, artesian wells, etc. The structure of the earth's crust, more especially with reference to folding, faulting and igneous intrusion in their bearing upon mining will then be considered and the course will close with a discussion of the methods employed in carrying out geological and magnetic surveys, and in the construction and interpretation of geological maps and sections.

The course will be illustrated by maps, models, lantern slides and specimens. Dr. Adams.

Text-Books:—Geikie, Outlines of Field Geology; Kemp, Ore Deposits of the United States and Canada; Phillips and Louis, A Treatise on Ore Deposits; Beck and Weed, The Origin and Nature of Ore Deposits.

Books of Reference:—The Reports of the Geological Survey of Canada, and the Publications of the U.S. Geological Survey.

149. GEOLOGY OF CANADA. A general description of the geology and mineral resources of the Dominion.

Dr. Bancroft.

150. PHYSICAL GEOGRAPHY AND CLIMATOLOGY. Geographical subdivisions of Canada; mineral areas; timber belts; wheat areas and water powers; irrigation; climatology and its relations to occupations and soil products.

This is a special course provided for the fourth year students in the Railway Transportation course. It will be illustrated by maps, models and lantern slides. Dr. Bancroft.

151. CRYSTALLOGRAPHY. A short course of lectures for students in chemistry, with laboratory practice in the measurement and drawing of crystals; calculation of axial ratios, etc.; use of the polarising microscope, axial angle apparatus, etc. Mr. Graham.

152. HISTORICAL GEOLOGY. This is a continuation of course 141, and will consist of lectures, colloquia and museum work extending throughout the session. Dr. Bancroft and Mr. Stansfield.

153. FIELD WORK. The students in mining will receive a course of instruction in geological mapping and field work—extending over one week—in connection with the summer school of mining. Dr. Bancroft, Mr. Graham and Mr. Stansfield.

154. FIELD WORK. During the ten days immediately preceding the opening of the fall term, a special course in the field methods employed in a geological survey will be given for those students who elect the geological option in the fourth year of the Mining course. Dr. Bancroft, Mr. Graham and Mr. Stansfield.

NOTE.—Students of the Mining and Chemistry courses take all the mineralogy of the third year. Chemistry students, in addition to the geology of the third year, may take the mineralogy of the fourth year.

Law and Economics.

PROFESSOR OF LAW:—F. P. WALTON.
PROFESSOR OF ECONOMICS:—S. B. LEACOCK.
ASSISTANT PROFESSOR OF ECONOMICS:—J. C. HEMMEON.
LECTURER IN RAILWAY ECONOMICS:—J. J. CREELMAN.
LECTURER IN ENGINEERING ECONOMICS:—FREDERICK B. BROWN.

171. ENGINEERING ECONOMICS. This course is intended to familiarize the engineering student with the business aspect of his profession. With this in view, lectures will be given on the subjects of barter and sale; money and credit; stocks and bonds; partnerships and corporations; the formation, organization and financing of companies; analysis of balance sheet; operating and fixed charges; estimates; specifications and contracts. Mr. Brown.

172. ELEMENTS OF POLITICAL ECONOMY. (Department of Railways. See p. 253.) Dr. Leacock.

175. ENGINEERING LAW. This course is intended to present such an outline of the law as will be useful to engineers and business men. Among the main topics may be mentioned the general law of contracts and damages; the law of the architect and builder; the statutes affecting labour; commercial paper; sale; lease; agency and partnership; joint stock companies; insurance; carriers by land and sea. Dr. Walton.

176. RAILWAY LAW. (Department of Railways. See p. 256.) Dr. Walton.

177. RAILWAY ECONOMICS. (Department of Railways. See p. 255.) Dr. Hemmeon and Mr. Creelman.

Department of Mathematics.

PROFESSOR:—D. A. MURRAY.

ASSISTANT PROFESSORS:—T. RIDLER DAVIES. C. T. SULLIVAN.

LECTURERS:—C. BATHO. R. D. FULLERTON. G. J. DODD. I. A. MILLER. B. L. SILVER.

First Year.

191. GEOMETRY. Exercises in plane geometry, elements of solid geometry and of geometrical conic sections. First term. Messrs. Davies, Dodd, Fullerton, Miller, Sullivan.

Text-Book:—Hall and Stevens' School Geometry, Parts I-VI (Macmillan).

192. ALGEBRA. Miscellaneous theorems and exercises, exponential and other series, properties and solution of higher equations, complex numbers and vector algebra, graphical algebra with an introduction to analytic geometry, indeterminate forms, limits, derivatives, slopes of curves. First and second terms. Prof. Murray, Messrs. Dodd, Fullerton, Silver, Sullivan.

Text-Books:—Rietz and Crathorne's College Algebra (Holt & Co.); Tanner and Allen's Analytic Geometry (American Book Co.).

193. TRIGONOMETRY. Plane and spherical. Second term. Messrs. Davies, Dodd, Fullerton, Miller, Sullivan.
Messrs. Davies, Fullerton, Macdonald, F. J., Macdonald, J. J., Sullivan.

Text-Book:—Murray's Plane and Spherical Trigonometry, with tables (Longmans).

194. MECHANICS. An elementary course in dynamics, statics, and hydrostatics. First and second terms. Messrs. Batho, Fullerton, Miller, Sullivan.

Text-Book:—Loney's Mechanics and Hydrostatics for Beginners (Cambridge University Press).

Second Year.

197. ANALYTIC GEOMETRY. The point, straight line, circle, parabola, ellipse and hyperbola, elements of geometry of three dimensions. First year (latter part of second term), and second year (first term). The second year work begins with the circle. Prof. Murray, Messrs. Fullerton, Miller, Sullivan.

Text-Book:—Tanner and Allen's Analytic Geometry (American Book Co.).

198. CALCULUS. Differentiation of functions of one or more variables, successive differentiation, tangents, etc., curvature, maxima and minima, integration, with applications to areas, volumes, moments of inertia, etc. First and second terms. Prof. Murray, Messrs. Fullerton, Miller, Sullivan.

Text-Book:—Murray's Differential and Integral Calculus (Longmans).

Third Year.

201. CALCULUS. Elementary differential equations. Prescribed for Electrical Engineering students of the third year; optional for all others. First and second terms. Prof. Murray.

For courses in second and third year mechanics (Nos. 83 and 86), see CIVIL ENGINEERING and APPLIED MECHANICS. pages 212 and 213.

Department of Mechanical Engineering.

PROFESSOR:——————

ASSOCIATE PROFESSORS:— C. M. McKERGOW. A. R. ROBERTS.

ASSISTANT PROFESSOR:—G. L. GUILLET.

LECTURERS:— R. J. DURLEY. G. ROBERTSON.

DEMONSTRATORS:— H. PALMER. ——————

SHOP INSTRUCTORS:— G. WOOLEY. J. STEWART. H. LANE. A. W. MILLER.

First Year.

211. MECHANICAL DRAWING AND DESIGNING. Elementary principles of mechanical drawing and draftsmanship; preparation of working drawings and tracings of simple machine details.

In connection with this work a brief course of lectures is given upon drafting room methods and standards, and the elementary considerations in the design and construction of, and selection of materials for, simple machine parts.

Required of all Engineering students. Three hours per week. Mr. Roberts and assistants.

SHOPWORK. The course in shopwork is intended to afford some preparation for that study of workshop practice on a commercial scale which every engineer has to carry out for himself. With this end in view, the student works in the various shops of the department, and completes in each a series of practical exercises. He thus obtains some knowledge of the nature and properties of the various materials he employs; he receives systematic instruction in the use and care of the more important hand and machine tools; and he acquires some manual skill. The instruction thus obtained must, however, be continued and supplemented. *For this purpose students are expected to spend the greater portion of each long vacation in gaining practical experience in engineering workshops outside the University.* Students are required to

read and make notes of selected portions of certain text-books and articles in technical journals, illustrative of the work done in each shop. The practical work is supplemented by a brief course of lectures dealing with shop processes and tools. The subject dealt with in this way gives the student a clearer idea of the care and use of the various instruments and tools, and of the performance of the machines. In connection with his shopwork each student is required to keep a record of his work. These records or notes are made on standard forms. These are handed in to the Shop Instructor at the close of each period of work, and, together with diligence and the results of a brief written examination, form the basis on which credit for shopwork is assigned.

Required of all Engineering students. Six hours per week.

212. CARPENTRY AND WOOD-TURNING. Sharpening and care of wood-working tools; sawing, planing and paring to size; preparation of flat surfaces, parallel strips, and rectangular blocks; construction of the principal joints employed in carpentry and joiner work, such as end and middle lap joints, end and middle mortise and tenon joints, mitres, dado and sash joints; dovetailing; scarfing; joints used in roof and girder work; wood-turning; use of wood-turning tools. Mr. Wooley.

213. SMITH-WORK. The forge and its tools; use and care of smiths' tools; management of fire; use of anvil and swage-block; drawing taper, square and parallel work; bending, upsetting, twisting, punching, and cutting; welding and scarfing. Mr. Stewart.

214. FOUNDRY-WORK. Moulders' tools and materials used in foundry work; the cupola; the brass furnace; preparation of moulding sand; boxes and flasks; core-making; use of core-irons; bench moulding; blackening, coring and finishing moulds; vents, gates and risers; floor moulding; open sand work; melting and pouring metal; mixtures for iron and brass casting. Mr. Lane.

Second Year.

218. MECHANICS OF MACHINES. (*a*) *Kinematics of Machines.*—Constrained motion; kinematic pairing; velocity and acceleration in mechanisms; centrodes; analysis and classification of simple mechanisms, including the quadric crank chain, the slider crank chain and various wheel trains; design of involute and of cycloidal wheel-teeth; (*b*) *Dynamics of Machines.*—Work and power; the power and turning effort of prime movers; inertia and kinetic energy of revolving and reciprocating parts of machines. Required of all Engineering students. Three hours per week. Mr. McKergow.

Text-Book:—Durley's Kinematics of Machines (Wiley).

219. MECHANICAL DRAWING. Drafting and tracing of more difficult exercises, and the making of assembly and detail drawings of machine parts. Lectures are given from time to time during the course dealing with drafting room methods, explanation of designs, and discussion of the reasons for selection of materials.

Required of all Engineering students. Three hours per week. Mr. Roberts and assistants.

220. MACHINE-SHOP WORK. Exercises in chipping; preparation of flat surfaces; filing to straight edge and surface plate, scraping, screwing and tapping; use of scribing block and surface gauge; marking off work for lathes and other machines; turning and boring cylindrical work to gauge; surfacing; screw-cutting and preparation of screw-cutting tools; machining flat and curved surfaces on the planing and shaping machines; drilling and boring; cutting angles and speeds; dressing and grinding tools.

Required of all Engineering students. Three hours per week. Mr. Miller.

Third Year.

224. MECHANICS OF MACHINES. Mechanisms involving chamber crank trains and chamber wheel trains; helical, skew, and worm gearing; relative motion and displacement; the

mechanism of the simple slide valve and of expansion valves; solution of valve setting problems; the function and dynamics of engine fly-wheels and governors; elements of engine balancing; friction and lubrication.

Required of students in Mechanical and Electrical Engineering. Two hours per week. Mr. Guillet.

Text-Books:—Durley's Kinematics of Machines (Wiley); Ewing's Steam Engine (Camb. Univ. Press).

225. MACHINE DESIGN. Principles of the strength of materials as applied to the design of the parts of machines; fastenings used in machine construction, bolts, screws, keys, cotters, rivets, and rivetted joints; journals and bearings; shafts and couplings.

Required of students in Mechanical and Electrical Engineering. Two hours per week. Mr. Robertson.

Text-Book:—Spooner's Machine Design (Longmans).

Book of Reference:—Unwin's Machine Design, Part I (Longmans).

226. MECHANICAL ENGINEERING. General course in Mechanical Engineering of Power Plants and Prime Movers.

Fuel and combustion, steam boilers and steam production; corrosion and defects of boilers; boiler plants and accessories, principles of selection and arrangement; the steam engine—estimation of power developed, economy of steam machinery; the indicator; condensers, pumps and accessories; steam turbines; principles of design in steam plants; gas engines and gas producer plants, their selection, economy and arrangement; general conditions governing location and design of power installations.

Required of all engineering students except those in Mechanical Engineering. Two hours per week. Mr. Durley.

Text-Books:—Meyer, Steam Power Plants (McGraw); Duncan, Steam and other Engines (Macmillan).

227. MECHANICAL ENGINEERING. Fuel and combustion; steam boilers and steam production; boiler installation and operation; the indicator; the steam engine, steam distribution and economy; steam turbines; condensers and auxiliary

machinery in steam plants; gas engines and gas producer plants; compressed air and refrigerating machinery.

Required of all students in Mechanical Engineering. Three hours per week. Mr. McKergow.

Text-Book:—Ripper, Heat Engines (Longmans).

228. MECHANICAL ENGINEERING LABORATORY. Testing and calibration of indicators, brakes and other measuring instruments; investigation of the operation of brakes, dynamometers, and governors; tests to determine the efficiency of belt and other transmission gearing, the properties of lubricants, the economy and performance of a steam engine and boiler, of a gas engine, of an air-compressor, and of a pump.

Required of all engineering students, except those taking the Electrical Engineering Course. Three hours per week. Mr. G. Robertson and assistants.

Reference Book:—Carpenter, Experimental Engineering.

223. MECHANICAL ENGINEERING LABORATORY.

First term—Course same as 228; second term—Experimental work on the relative value of throttling and expansion governors; effect on the economy of steam engine of changing from simple to compound, triple, and quadruple expansion; the testing of steam boilers, producer gas engines, air compressors, and a complete steam power plant test.

Required of students in Electrical Engineering. Six hours per week in first term and three per week in second term. Mr. Robertson and assistants.

Reference Book:—Carpenter, Experimental Engineering.

229. THERMODYNAMICS. Fundamental laws and equations of thermodynamics; their application to gases and to vapours, saturated and superheated; efficiency of ideal heat engines; properties of steam, and elementary theory of the steam engine; elementary theory of gas and hot air engines.

Required of third year students in Mechanical and fourth year students in Electrical Engineering. Two hours per week. Mr. Roberts

Text-Book:—Ewing, The Steam Engine and Other Heat Engines (Camb. Univ. Press); Marks and Davis, Steam Tables.

Reference Book:—Ennis, Thermodynamics applied to Engineering.

230. MECHANICAL DRAWING. Exercises in making sketches of machine parts and in preparing working drawings and tracings from them. Required of Electrical and Mechanical Engineering students. Ten hours per week during summer term, between the second and third years. Mr. Roberts and assistants.

231. MECHANICAL DRAWING. This course is supplementary to the course in machine design and consists of exercises in design and draughting of fastenings, machine parts and simple machines. Required of Mechanical Engineering students. Six hours per week for first term and three hours per week for second term. Mr. Roberts and assistants.

232. MECHANICAL DRAWING. A course similar to 231, but less extended. Required of Electrical Engineering students. Three hours per week. Mr. Roberts and assistants.

233. SMITH WORK. Tool forging and tempering, using carbon and high-speed steels; making lathe and planer tools; taps, dies, drills, and tools for the forge; special welding. Eleven hours per week for half the summer term, prior to work in third year session. Required of Electrical and Mechanical Engineering students. Mr. Stewart.

234. FOUNDRY WORK. Moulds requiring a higher degree of skill and judgment than elementary course; special methods of strengthening the mould; coating for smooth surfaces on castings; methods of avoiding defects; cupola charging and operating; core mixtures and core making; coring moulds. For same period as 233. Required of Electrical and Mechanical Engineering students. Mr. Lane.

235. PATTERN MAKING. Use of pattern-makers' tools; elements of pattern-making; allowances to be made for draught and for contraction in moulding and casting; use of contraction rule; preparation of prints and plain core-boxes; exercises

in paring and turning; construction of patterns and core-boxes for pipes, flanges, elbows, tees and valves; more difficult exercises in pattern-making, including built-up patterns and face-plate work; gear and wheel patterns.

Required of students in Mechanical Engineering. Three hours per week for half the session. Mr. Wooley.

236. MACHINE SHOP. Lathe work; marking off; centering; turning and boring; radial facing; filing; grinding and polishing; internal and external screw cutting; change gear calculations; taper turning and bench work.

Required of students in Mechanical Engineering. Three hours per week for half the session. Mr. Miller.

237. SHOP PROCESSES AND MANAGEMENT. Factors of economic production by machine tools; limits of time, power and cost; standardization of parts; selection of economic cutting conditions; requirements for accurate and interchangeable work; economic movement of material in factory, economic production in the foundry and smith shop; co-ordination of various factory departments; methods of experimental investigation of shop processes.

Required of students in Mechanical Engineering. One hour per week. Mr. Robertson.

Fourth Year.

240. MECHANICS OF MACHINES. (A) Gyrostatic action in machines; further treatment of engine governors; primary and secondary balancing of engines; knocking and shocks in reciprocating machinery; vibration; valve gears. (B) The principles underlying the stability and weight supporting power of curved and plane surfaces driven through the air at high velocities together with the power required to maintain these velocities are studied and the designs of such machines used for purposes of illustration.

Required of students in Mechanical Engineering. Two hours per week. Mr. McKergow.

Reference Books:—Dalby's Balancing of Engines; Spangler's Valve Gears; Lanchester's Aerodynamics.

241. DESIGNING. The complete design of an engine, a pump, or a machine tool, is worked out, and the requisite working drawings and tracings are prepared.

Required of students in Mechanical Engineering. Three hours per week. Mr. Roberts.

242. MACHINE DESIGN. First term.—Design of power transmission gearing, including belts, ropes, friction, chain and toothed gearing; fits and fitting; second term.—Engine details, including cylinders, piston rods, connecting rods, shafts, flywheels, and machine frames.

Required of Mechanical Engineering students. Two hours per week. Mr. Roberts.

Text-Book:—Spooner's Machine Design (Longmans).

Reference Book:—Unwin's Machine Design, Parts I and II (Longmans).

243. MACHINE DESIGN. Course same as 242, first term. Two hours per week during first term. Required of Electrical Engineering students. Mr. Roberts.

244. POWER PLANT DESIGN. The arrangement, design and operation of power plants worked by steam or gas engines; effect of requirements for lighting, heating and power distribution. One lecture hour and one drafting room period per week in second term. Mr. McKergow.

Text-Book:—Gebhardt, Steam Power Plant Engineering. Required of students in Mechanical Engineering.

A student must select one of the following courses.

245. LOCOMOTIVE ENGINEERING. Train resistance, tractive force in locomotives; locomotive performance and rating; brakes; fuel and water in locomotive work. One hour per week. Prof. Keay.

Text-Book:—Henderson, Locomotive Operation.

246. MARINE ENGINEERING. Ship resistance and propulsion; efficiency and performance of marine machinery and propellers; arrangement and operation of main and auxiliary machinery for marine work. One hour per week. Mr. Durley.

Reference Books:—Taylor, Resistance of Ships. Sennett and Oram, The Marine Steam Engine.

247. HEATING AND VENTILATION OF BUILDINGS. Loss of heat from buildings; radiating surfaces; design and operation of heating systems; principles of ventilation; fans and blowers; design of duct systems; temperature and humidity control. One hour per week. Mr. McKergow.

Text-Book:—Carpenter, Heating and Ventilating Buildings (Wiley).

249. MECHANICAL ENGINEERING LABORATORY. Experimental investigation of:—engine balancing and vibration; action of governors; performance of fans and blowers; power absorbed by machine tools; efficiency of hoisting machinery; performance of steam boilers; steam engines, condensers, gas engines and producers; efficiency of air compressing and pumping machinery; tests of a complete steam power plant, gas power plant, and a heating and ventilating system. Ten hours per week. Mr. Guillet.

Required of students in Mechanical Engineering.

Text-Book:—Carpenter, Experimental Engineering.

257. EXPERIMENTAL ENGINEERING. Theory of errors; methods of testing and tabulating results of tests on steam boilers, steam engines, gas producers, internal combustion engines, air compressors, refrigerating machinery, etc. Required of students in Mechanical Engineering. One hour per week. Mr. Guillet.

Text-Book:—Carpenter, Experimental Engineering.

251. THERMODYNAMICS. Theory of reversed heat engines and refrigerating machines; entropy and entropy-temperature diagrams; advanced theory of internal combustion engines; a thermodynamic study of the steam engine, including the behaviour of steam in the cylinder; economy of steam engines; influence of size, speed, and rate of expansion; compound expansion; the steam jacket; the testing of steam engines; flow of gases and vapours; theory of steam turbines. The whole course is carried out as far as possible in connection with the experimental work of the Mechanical Engineering Laboratories. Two hours per week. Mr. Roberts.

Required of students in Mechanical Engineering.

Text-Books:—Ewing's Steam Engine (Cambridge Univ. Press); Moyer, Steam Turbines (Wiley); Marks and Davis, Steam Tables and Diagrams (Longmans).

Books of Reference:—Stodola, The Steam Turbine (trans. Lowenstein), (Van Nostrand); Jude, Theory of the Steam Turbine (Griffin).

252. MACHINE SHOP. Experimental work and studies for the minimum time required for production, involving a consideration of best available machine tool speeds, necessary power of belting, most efficient tool angles, quality of metal and the kind of tool steel used. The course includes work in connection with the lathe, the planer, slotter, shaper, miller and turret lathe; and instruction in gear cutting and cutter grinding. Required of students in Mechanical Engineering. Three hours per week. Mr. Miller.

253. MANUFACTURING PLANT DESIGN. Methods adopted in designing a plant for manufacture of a specified product; lay-out of shops; construction of buildings; equipment; requirements for power, heat and light; fire protection; general system of operation and cost determination as affecting design of plant. (Optional with Course 99, [Hydraulic Machines] for students in Mechanical Engineering.) Two lecture hours and one drafting room period per week, second term. Mr. Roberts.

Text-Book:—Day, Industrial Plants (Engineering Magazine).

254. WORKS ORGANIZATION AND ACCOUNTING. Analysis of costs of production and establishment changes; elements of factory accounting; factory record systems; depreciation; organization of staff; functions of departments; purchasing systems; methods of remunerating labour; shop organization and equipment as affecting efficiency of production. Work done as far as possible in connection with course 253. Required of students in Mechanical Engineering. One hour per week. Mr. Guillet.

Reference Book:—Carpenter, Profit-making management (Engineering Magazine).

Department of Metallurgical Engineering and Metallurgy.

PROFESSOR:—ALFRED STANSFIELD.
LECTURER:—S. W. WERNER.

Third Year.

261. GENERAL ELEMENTARY METALLURGY. An introductory course in the metallurgy of copper, lead, iron and steel.

Two lectures a week during the first term and one half laboratory period in the second term. Prof. Stansfield and Mr. Werner.

262. METALLURGICAL LABORATORY. The course includes instruction in pyrometry, calorimetry and the microscopic examination of metals. For Metallurgical students.

263. FIRE-ASSAYING, PART I. The lectures and instruction sheets give an account of the furnaces, balances and other appliances used in assaying; the sampling and preparation of ores; fluxes and reagents, and the methods used in assaying gold, silver and lead ores, copper and copper ores and mattes; gold and silver bullion and base bullion; cyanide precipitates and solutions.

In the laboratory the students learn as many of these methods as are possible in the time allotted to this course. Care is taken that a student shall be able to make such assays as would be required at a mine, and with a fair degree of accuracy. Metallurgical and mining students usually have an opportunity of doing additional fire-assaying in their fourth year.

One lecture and two afternoons laboratory a week during the first term, for Metallurgical, Mining and Chemical Engineering students. Mr. Werner.

Reference Book:—C. H. Fulton, "Manual of Fire-Assaying."

264. FIRE-ASSAYING, PART II. In this course the remainder of the above assay-methods are practised and the student is given the opportunity of acquiring greater accuracy and speed and the ability to run a number of assays at the same time. The course is designed to fit students for entering an assay office at a smelter or refinery. The course is taken in the

fourth year, and is required of all Metallurgical Engineering students except those who specialize in iron and steel.

Students in the chemistry course (II) or the Metallurgy course (VIII) take subjects 263 and 264 in a summer school before the third year.

265. METALLURGICAL CALCULATIONS. This is an introductory course on the application of exact chemical and physical laws to metallurgical operations such as the combustion of fuel, the smelting of ores and the construction and heating of furnaces.

One lecture a week for Metallurgical students. Prof. Stansfield.

Text-Book:—J. W. Richards, "Metallurgical Calculations," Vol. I.

266. COLLOQUIUM. Metallurgical students have certain hours for reading in the library. They are required to read current metallurgical periodicals and to give an account of their reading at the Colloquium which is held once a week. Dr. Stansfield.

267. SUMMER SCHOOL (METALLURGICAL WORKS). Metallurgical students are required to attend the summer school which is held at the end of their third year. In this school, visits are paid to metallurgical works both in Montreal and at a distance.

In addition to this, excursions may be made by the class from time to time to such metallurgical works as are within reach.

Fourth Year.

271. METALLURGY (GENERAL). (*a*) A few lectures in explanation of the laboratory work (273).

(*b*) The metallurgy of iron and steel.

Text-Book:—Bradley Stoughton, "The Metallurgy of Iron and Steel."

(*c*) The metallurgy of copper, lead, gold, silver, zinc and nickel.

Text-Book:—L. S. Austin, "The Metallurgy of the Common Metals."

Two lectures a week during the session. Prof. Stansfield.

272. METALLURGY. (*a*) A more detailed account of the metals mentioned in 271.

Reference Books:—Peters, "Practice of Copper Smelting"; Ingalls, "Lead Smelting and Refining"; Ingalls, "Metallurgy of Zinc"; Collins, "Metallurgy of Silver"; Rose, "Metallurgy of Gold"; Stoughton, "The Metallurgy of Iron and Steel"; Forsythe, "The Blast Furnace and the Manufacture of Pig Iron."

(*b*) General advanced metallurgy.

Text-Book:—Fulton, "Principles of Metallurgy."

(*c*) Metallurgical construction and design, and costs of metallurgical plant and operations.

Required of Metallurgical students. Three hours a week during the session. Prof. Stansfield.

273. METALLURGICAL LABORATORY. The following metallurgical exercises will be carried out, as far as time will permit, either as demonstrations, individual work, or work in groups:—(*a*) Roasting a sulphide or arsenical ore on a small scale and also in the large roasting furnace; (*b*) formation and properties of copper or lead mattes and slags; (*c*) smelting a copper or lead ore in the water jacketed blast furnace; (*d*) melting and casting certain metals and alloys; (*e*) the use of the electric furnace; (*f*) leaching a copper or silver ore; (*g*) elementary exercises in some of the following:—pyrometry, calorimetry, flue-gas analysis, tests of refractory materials, microscopic examination of metals, heat-treatment of iron or steel.

Required of Metallurgical and Mining students.

Students of Metallurgical Engineering spend four or five periods during the first term in the Hydraulic Laboratory. These periods are taken from courses 273 and 300.

274. METALLURGICAL LABORATORY, THESIS WORK. This time is devoted to the serious study of some metallurgical problem. Usually two students work together and present a

thesis containing an account of important published work bearing on their subject, as well as the result of their own experimental researches.

Required of Metallurgical students. Two or three periods a week during the second term.

279. HYDRO-METALLURGY. A course of two laboratory periods and one lecture for one term for students taking Metallurgy (VIII).

275. ELECTRO-METALLURGY. This course of lectures is restricted to a consideration of the principles and construction of electric furnaces, and their uses for smelting and refining metals. Other parts of the subject are treated in the lectures on electro-chemistry. Two lectures a week during the second term for Metallurgical, Electrical and Chemical students. Prof. Stansfield.

Text-Book:—A. Stansfield, "The Electric Furnace."

276. ELECTRO-METALLURGY LABORATORY. The work is arranged to illustrate the lectures. Groups of students operate each of the main types of electric furnace and become familiar with some of the principles of electric furnace construction and design. One period a week during the second term.

277. COLLOQUIUM. One hour a week during the session is given to informal discussion of research and other work being done in the department, and to other topics of metallurgical interest. Dr. Stansfield.

278. METALLURGICAL MACHINERY AND DESIGN. This course includes lectures on metallurgical machinery and design, which are included in *272*, and two periods a week, during the second term, are devoted to drafting and designing metallurgical furnaces and plants.

Department of Mining Engineering.

PROFESSOR:—JOHN BONSALL PORTER.
ASSISTANT PROFESSOR:—JOHN W. BELL.
DAWSON FELLOW IN MINING:—PHILIP P. BAILY.
DEMONSTRATOR:————————
DOUGLAS RESEARCH FELLOWS:—ALAN E. CAMERON. WILLIAM G. MITCHELL.

Third Year.

291. MINING ENGINEERING. *The principles and practice of mining.*—Prospecting, simple mining methods, excavation, explosives and blasting, rock drills, coal cutters, gold washing and dredging, hydraulic mining, quarrying, etc. Two lectures per week in the second term. This course is continued in the fourth year. (See 297.) Prof. Porter.

292. ORE DRESSING. *The theory and practice of ore dressing and coal washing.*—The forms in which ores occur and the effect of mixture, impurity, etc.; the theoretical considerations affecting mineral separations; the general mechanical operations involved; dressing machinery—breakers, stamps, rolls, screens, jigs, vanners, tables, washers, buddles, magnetic separators, etc. One lecture per week in the first term and two per week in the second term and laboratory. This course is continued in the fourth year. (See 299.) Prof. Porter.

293. ORE DRESSING LABORATORY. Simple tests of ores, sands and gravels, by means of pan, vanning shovel, classifier, jig, etc. One afternoon per week in the second term. Further laboratory work in the fourth year. (See 300 and 301.)

Fourth Year.

295. MINE MAPPING. The calculations and plotting of mine surveys and mine maps. One afternoon per week in the first term. Mr. Bell.

297. MINING ENGINEERING. *The principles and practice of mining.*—Prospecting, deep wells, diamond drilling, open cast mining, shaft sinking, drifting, underground development, methods of mining, timbering, hauling, hoisting, draining,

pumping, lighting, ventilating, etc.; mine accidents and their prevention; general arrangement of plant, administration, stores and dwellings; examination and valuation of mines and mine reports. Three lectures a week. Prof. Porter.

298. MINING AND ORE-DRESSING MACHINERY AND DESIGN. *The application of mechanical and electrical engineering to mining, ore-dressing and metallurgy.*—Machinery for haulage, hoisting, pumping, ventilating, etc.; mine power plants, power transmission, tramways, cable ways, compressors, blowing engines, conveyors, cranes, etc.; mine and mill buildings, head frames, ore bins, lay-out of plant, etc. One lecture a week and two drafting room periods in the second term for all students in course and one additional lecture per week for students taking alternative (*b*). Prof. Porter and Mr. Bell.

299. ORE-DRESSING AND MILLING. Continuation of the ore dressing course of the third year. Concentration plants, coal breakers and washers, dry concentration, amalgamation, gold and silver milling, cyaniding, chlorinating, etc. Three lectures a week in the first term. Prof. Porter.

302. MINING COLLOQUIUM. One hour a week is given to the presentation and discussion of papers on the work being done in the department and to other matters relating to mining and ore dressing. Students are required to take the leading part in these exercises.

300. ORE DRESSING AND METALLURGICAL LABORATORY. Two mornings per week in the first term are given to the ore dressing, hydraulic and metallurgical laboratories. This time is chiefly assigned to ore dressing and metallurgy, and certain typical operations in each are carried out. The set exercises in ore dressing are a continuation of the third year laboratory work and comprise a series of experiments in crushing, classifying, jigging, slime treatment, magnetic separation, cyanidation and amalgamation, and include a complete trial run of the five-stamp battery on a free milling gold ore.

(Students taking the geological alternative give one morning per week in the first term to petrographical laboratory and only one to ore dressing, metallurgy, etc., as above.)

301. Ore Dressing Laboratory and Thesis Work. In the second term one whole day and one additional morning are given to individual work in the laboratory and to the preparation of a thesis to be filed in the departmental library and, when suitable, published.

The subjects available for thesis work are very numerous and range from purely theoretical investigations in crushing, screening, classification, concentration, etc., to the experimental determination of the best methods for the treatment of particular ores and coals. Over one hundred and twenty-five different lots of ore are available, and the quantities are sufficient for work on a comparatively large scale. New ores are constantly being secured.

Advanced Courses.

Special courses of instruction are offered to graduate students in mining and ore dressing. These courses include lectures, colloquia and individual work in the laboratories and drafting room.

Text-Books:—The text book used in ore dressing is R. H. Richard's Text-Book in Ore Dressing. No formal text-book is used in mining, but in both mining and ore dressing, students are required to look up a large number of special references and also to make frequent use of the works named below, those marked with a * being so freely used that they should, if possible, be purchased by each member of the class: Sir C. LeNeve Foster's Ore and Stone Mining; *F. Donaldson's Practical Shaft Sinking; *R. B. Brinsmade's Mining Without Timber; *H. C. Hoover's Principles of Mining; *M. S. Ketchun's, Design of Mine Structures; Mayer's Mining Methods in Europe; *H. W. Hughes' Text-Book of Coal Mining; Boulton's Coal Mining; Behr's Winding Plants for Great Depths; Saunders' Mine Timbering; *W. H. Storms' Timbering and Mining; M. C. Iheseng's, Manual of Mining; *R. H. Richard's Ore Dressing; T. A. Rickard's Stamp Milling of Gold Ores and *Sampling and Estimation of Ore in a Mine; H. Louis' Handbook of Gold Milling; T. K. Rose's

Metallurgy of Gold; H. F. Collins' Metallurgy of Silver; James' Cyanide Practice; *Julian and Smart's Cyaniding Gold and Silver Ores; *Handbook of Mine Structures; The Coal and Metal Miners' Pocket-book; *Text-book of Rand Metallurgical Practice, Vols. 1 and 2.

Laboratories.

The specific laboratory instruction in mining subjects proper begins in the third year, with courses in assaying and elementary ore dressing. In the fourth year this work is elaborated, the general method of instruction being first to conduct a limited number of important typical operations, and then to assign to each student certain methods which he must study out in detail, and upon which he must experiment and make written report. In this work he is guided by the professors and demonstrators, and assisted by the other students, whom he must in turn assist when practicable. In this way every student acquires detailed knowledge of certain typical operations and makes at least one original investigation and at the same time gains a fair general experience in many of the important methods in use.

Illustrations, Museums, Societies, etc.

In addition to a large series of lantern slides, the department owns a collection of over four thousand photographs and other illustrations. This collection is constantly being enlarged.

The Museums of the building contain suites of ores, concentrates, fuels, and metallurgical materials, models of mines and furnaces, and collections of finished products.

The McGill University Mining Society meets fortnightly to read and discuss papers by graduate and student members, and occasionally to hear lectures by gentlemen eminent in the profession. The Society has been made a students' section of the Canadian Mining Institute, and its undergraduate members are therefore student members of the Institute, and receive all its publications. Papers read before the Mining

Society may be entered in competition for any students' prizes offered by the Canadian Mining Institute. (See page 260.) Members may also attend meetings of the mining section of the Canadian Society of Civil Engineers, and, may, for a nominal fee, become student members, and receive all the publications of the Society.

The Mining Society Camera Club is a departmental organization comprising members of the staff and students interested in Engineering photography. The club meets fortnightly and excursions, competitions, etc., are arranged from time to time.

Field School in Mining.

294. The summer vacation class instituted in 1898 is now a fixed part of the course. All students of Mining in regular course are required to attend this class at the end of the third year.

The school lasts about six weeks. Of this period about one-sixth is given to field work in geology, one-half or more to mining work proper, and the remainder, when practicable, to an examination of ore dressing and milling plants and metallurgical establishments. The Professor of Mining and his assistant and a member of the geological staff go with the party and hold daily demonstrations or classes. The students take notes and sketches on the ground, and afterwards are required to work up these notes and to submit a formal report on some part or the whole.

During the last fifteen years these field parties have visited British Columbia six times, Nova Scotia four times, Newfoundland, and Pennsylvania and Michigan twice each. Numerous visits have also been made to Sudbury, Cobalt and other Ontario localities while en route to more distant points.

The instruction given during this field course is free to all Mining students, the only expense to them being the cost of board, lodging, and railway fares. These expenses are kept as low as is practicable and are in part met by the income of a fund provided by Sir William Macdonald, from which de-

serving students who require aid can also have money advanced them by applying to the Professor of Mining.

At the close of the regular work of the field school arrangements are made with the managers of the mines visited and others to give the members of the party individual employment for the remainder of the summer. All students are earnestly advised to engage in such work, and it is probable that it will be made obligatory at an early date in the future.

Department of Physics.

PROFESSORS:—H. T. BARNES. A. S. EVE.

ASSISTANT PROFESSORS:—F. H. DAY. L. V. KING.

LECTURER:—J. A. GRAY.

SENIOR DEMONSTRATOR:—N. E. WHEELER.

DEMONSTRATORS:—A. A. SCOTT. C. H. SMITH. C. B. JAMES.

The instruction includes a fully illustrated course of experimental lectures on the general principles of physics, embracing, in the first year:—*The Laws of Energy, Heat, Light, and Sound;* in the second year, *Electricity and Magnetism,* accompanied by courses of practical work in the laboratory, in which the students will perform for themselves experiments, chiefly quantitative, illustrating the subjects treated in the lectures. Opportunity will be given to acquire experience with all the principal instruments used in exact physical and practical measurements.

First Year.

311. HEAT, SOUND AND LIGHT. Two hours per week. Tuesday and Thursday mornings. Prof. Barnes.

Text-Book:—Deschanel's Heat, Sound and Light, special edition, Renouf Publishing Co.

312. LABORATORY COURSE. Three hours per week, spent in practical measurements in the Macdonald Physical Laboratory in conjunction with the lecture courses. See time table of sections.

Text-Book:—Tory and Pitcher's Laboratory Manual.

Second Year.

315. ELECTRICITY AND MAGNETISM. Two hours per week. Monday and Friday or Wednesday and Saturday mornings. Prof. Day.

316. LABORATORY COURSE. Three hours per week. (*a*) *Magnetism and Electricity.*—Measurements of pole strength and moment of a magnet; the magnetic field; methods of deflection, and oscillation; comparison of moments and determination of the elements of the earth's magnetism. (*b*) *Current Electricity.*—A complete course of measurements of current strength, resistance, and electromotive force; calibration of galvanometers.

Text-Books:—Hadley's Electricity and Magnetism; Jackson's Elementary Electricity and Magnetism (Macmillan); Tory and Pitcher, Laboratory Manual.

317. LABORATORY COURSE. An additional course, involving four laboratory periods per week, with lectures, will be given in the month of September, for students in Electrical and Mechanical Engineering.

Third Year.

320, 321. LABORATORY COURSE. Students of Electrical Engineering will continue their work in the Physical Laboratory in the third year. The following is a brief outline of the course:—

Magnetic elements and measurements; testing magnetic qualities of iron; theory and practice of absolute electrical measurements; comparison and use of electrical standards of resistance, E. M. F., self and mutual-induction, and capacity; testing and calibration of ammeters and voltmeters; insulation and capacity tests; electric light photometry.

Text-Book:—To be selected. Wednesday morning at 10. Laboratory, Wednesday morning and afternoon. Prof. Barnes and Mr. King.

Fourth Year.

322. ELECTRICAL THEORY. Optional course of lectures for students of Electrical Engineering.

325 to 329. ADVANCED COURSES AND RESEARCH. For advanced courses of lectures see under honour courses in Arts. Owing to the complete equipment of the laboratories there are special facilities offered for those desiring to take up research work in heat, optics, sound, electricity, and magnetism and radioactivity.

Department of Surveying and Geodesy.

PROFESSOR:—C. H. McLEOD.
LECTURER:—A. J. KELLY.
DEMONSTRATORS:— { JAMES WEIR.

This course is designed to give the student a theoretical and practical training in the methods of plane and geodetic surveying, in the field work of engineering operations, and in practical astronomy. The lecture course is divided as follows:—

Second Year.

346. SURVEYING. Chain and angular surveying; the construction, adjustment, use and limitations of the transit, level, micrometer, compass and minor field and office instruments; railway circular curves; planimeter and pantograph; general topography; levelling; contour surveying; stadia surveying; land systems of the Dominion and provinces. Mr. Kelly.

Third Year.

352. SURVEYING. Theory and use of instruments; hydrographic surveying; the use of the plane table; mining surveying; barometric and trigonometric levelling; elements of practical astronomy. Prof. McLeod.

353. SURVEYING. Theory and use of instruments; the use of the plane-table; mining surveying; magnetic surveying; hydrographic surveying; barometric and trigonometric level-

ling; theory and setting out of transition curves; elements of geodetic surveying; elements of practical astronomy. Prof. McLeod.

Fourth Year.

359. GEODESY. The determination of time, latitude, longitude and azimuth; figure of the earth, measurements of base lines and triangulation systems; adjustment and reduction of observations. Prof. McLeod.

Students are required to carry out the following field work:—

347. FIELD WORK, SECOND YEAR. (1) A farm survey, using chain and compass; (2) a compass and micrometer survey; (3) a detail survey, using chain and offset; (4) levelling; (5) transit work.

348. MAPPING, SECOND YEAR. Drafting from field notes of chain and angular surveys.

354. FIELD WORK, THIRD YEAR. (1) Level and transit practice, including the adjustments of the instruments; (2) a survey and location of a railway line, with determination of topography and contours and subsequent staking out for construction; (3) a stadia survey; (4) a hydrographic survey of a river channel, including measurement of discharge; (5) a survey at night illustrating underground methods; (6) astronomical observations with sextant and engineer's transit.

361. FIELD WORK, FOURTH YEAR. (1) Determination of latitude (*a*) by transit and sextant observations of Polaris, (*b*) by zenith telescope, (*c*) by noon observations with transit and sextant; (2) determination of azimuth, (*a*) by equal altitude observations of the sun, (*b*) by observation of elongation of Polaris, (*c*) by observation of a circumpolar star with engineer's transit, (*d*) by means of solar attachments and solar compass; (3) determination of time, (*a*) by equal altitude observations of the sun with sextant and transit, (*b*) by observations of the meridian passage of stars with astronomical transit; (4) determination of longitude by clock comparisons and by lunar observation; (5) base line measure-

ments; (6) precision levelling; (7) measurement of angles by geodetic methods; (8) plane table surveys; (9) special problems in railroad track work.

All students are required to keep complete field notes, and to prepare maps, sections and estimates from their own surveys. This office work is principally done during the regular summer school session.

Field work is required of all students of the second year (except those taking the Practical Chemistry course), of students of the third year in the courses of Civil and Mining Engineering and Railway Transportation, and of the fourth year in the Civil Engineering course. The work will begin in 1913 on September 1st, and will continue for four weeks.

360. Geodetic Laboratory, Fourth Year.

The following determinations of the constants and errors of surveying instruments are made in the geodetic laboratory by the fourth year students in the Civil Engineering course:— (1) Measurement of magnifying power; (2) errors of graduation; (3) measurement of eccentricity of circles; (4) determinations of errors of run of theodolite microscopes; (5) investigation of the errors of graduation of a standard bar; (6) graduating scales with the dividing engine, and comparison thereof on the comparator; (7) investigation of the errors of graduation of circles on the circular comparator; (8) determination of the constants of steel tapes; (9) investigation of the graduation errors of steel tapes on the fifty-foot comparator; (10) determination of the scale value of level vials; (11) investigation of the accuracy of barometers; (12) determination of the collimation and inclination errors in an astronomical transit by nadir observations.

The equipment of the surveying department comprises the following in addition to the apparatus of the observatory and geodetic laboratory:—

Fifty-nine transit theodolites by various makers, with solar and mining attachments; a photo-theodolite; two 8-in. alt-azimuths; thirty-one dumpy and twelve wye levels; two gradient-telemeter levels; hand levels and clinometers; four precision levels; seventeen surveyors' compasses; one miner's dial; three prismatic compasses; pocket com-

passes; marine sextants; artificial horizons; box sextants; two reflecting circles; seven plane tables; six current meters; Rochon micrometers; double image micrometers; field glasses; heliotropes; barometers; one 100 ft. Invar tape; 300 ft. and 500 ft. steel tapes suitable for base measurements; steel chains and steel bands; linen and metallic tapes; sounding lines; pickets; levelling rods; micrometer targets; slope rods; pedometers; station pointer; pantographs, planimeters; slide rules and other minor appliances.

EXAMINATION FOR LAND SURVEYORS:—Any graduate in the Faculty of Applied Science in the Department of Civil Engineering and Land Surveying, may have his term of apprenticeship shortened to one year for the profession of land surveyor.

Text-Books and Books of Reference:—Gillespie's Surveying, Johnson and Smith's Theory and Practice of Surveying, Shortland's Nautical Surveying, Greene's Practical and Spherical Astronomy, Nautical Almanac, Baker's Engineer's Surveying Instruments, Breed and Hosmer's Principles and Practice of Surveying, Turnbull's Underground Surveying.

Department of Railways.

PROFESSOR:—H. O. KEAY.
ASSISTANT PROFESSOR:—(To be appointed).
LECTURERS:—A. A. GOODCHILD. HERBERT MARTIN. GEO. C. WELLS. J. J. CREELMAN.
INSTRUCTORS:—R. GOLTMAN. H. F. MILLER.

Third Year Railway Transportation. (Operating and Executive.)

172. ELEMENTS OF POLITICAL ECONOMY. Two hours per week throughout the session. Dr. Leacock.
Text-Book:—John Stuart Mill, Principles of Political Economy.

175. ENGINEERING LAW. See page 226.

135. ENGLISH. The preparation and criticism of reports on stated subjects, the object being to acquire a clear and accurate style. Mr. Latham.

371. FREIGHT SERVICE. Freight department organization, records and statistics, solicitation of freight, claims, clearing systems, waybilling, supervision of fast freight, car service, per diem, etc.—a full explanation of the methods of handling freight. Mr. Martin.

228. MECHANICAL ENGINEERING LABORATORY.—See page 233.

86. MECHANICS.—See page 213.

372. RAILWAY ENGINEERING. The locomotive and its work; locomotive and grade problems; effect of distance, rise-and-fall and curvature on train mile costs; estimate of probable receipts and expenditures; economics of location, reconnaissance, preliminary, and location surveys; turnouts; yards and terminals; details of construction; materials of construction.

For list of Reference Books, see page 258. (Fourth Year Railway Engineering.)

355. MAPPING.

Draughting, from notes, the paper location of a railway; maps and profiles; earthwork diagrams; switch design; yard design.

373. RAILWAY MECHANICAL ENGINEERING. Elementary course on the steam engine, steam boilers, power plant equipment, steam turbines, gas engines, compressed air and elementary locomotive construction and operation. Prof. Keay.

Text-Book:—Ripper's Heat Engines. (Longmans, Green & Co.).

374. RAILWAY ORGANIZATION AND ACCOUNTING. Organization and work of the various departments; duties of officers; accounting. (A course preparatory to that of the fourth year.) Mr. Goodchild.

375. SHORTHAND. Mr. Goltman.

376. TELEGRAPHY. Mr. Miller.

Fourth Year Railway Transportation (Operating and Executive.)

379. ACCOUNTING. The principles of accounting, a development of the course of the third year. Earnings and expenses; shop material and cost, labour and methods of paying for same; statements, their nature and value. Mr. Goodchild.

177. RAILWAY ECONOMICS. Transportation economics, including the theory of railway rates, railway commissions, taxation of railways, government ownership and control, the treatment of transportation problems in Europe and America, etc. Attention will be paid to questions closely connected with transportation in Canada, such as the relative powers of the Dominion and Provincial Governments, the tariff, immigration, government aid to railways, public lands and immigration. Dr. Hemmeon and Mr. Creelman.

111-112. ELECTRICAL ENGINEERING. For details, see page 220.

138. ENGLISH. Continuing the work of the third year. Mr. Latham.

380. FREIGHT SERVICE. An extension of the work of the third year. This course involves a discussion of the broader problems of the freight traffic department. Mr. Martin.

381. RAILWAY OPERATION. Organization of conducting transportation department, the development of train dispatching in America, the development of the control of train movement in Europe, conducting transportation expenses, formation of time tables, standard train rules, rules for movement of trains on single track, rules for movement of trains on double track, general rules covering the operation of trains and handling of freight and passengers, clearance cards and other blanks, station service, yard service, road service, duties of dispatchers and operators.

382. SIGNALS. Block signalling, manual systems, automatic systems, estimates and plans.

383. INTERLOCKING. Economic considerations, the different forms of mechanical interlocking machines, the locking sheet, dog charts, the lead out, the ground connections, switch and signal connections, the cabin, power machines, costs, interlocking of terminals and yards, electrical apparatus in connection with mechanical machines, construction and maintenance, organization of signal department, records and reports.

384. INTERLOCKING DESIGN. Design of crossing lay out, making of locking sheets and dog charts, block signal location plans, design of switch and signal connections.

Books of Reference:—Adams, Block Signalling; Wilson's Mechanical Interlocking for Railways; Derr's Block Signal Operation; Rules of the London North Western Railway; American Railway Assoc. Standard Code; Manual of recommended practice, American Railway Engineering and Maintenance of Way Assoc.; Laverack's Locking.

385. PASSENGER SERVICE. The passenger department; its organization, methods and general principles governing passenger business; baggage system; mail and express.
Mr. Wells.

150. PHYSICAL GEOGRAPHY AND CLIMATOLOGY. Geographical subdivisions of the country; mineral areas; timber belts; wheat areas and water powers; irrigation; climatology and its relations to occupations and soil products. Dr. Bancroft.

176. RAILWAY LAW. This subject is concerned largely with the Railway Act, and a general outline of the law of common carriers. Special attention will be given to such subjects as expropriation, damage suits against railway companies, and the more usual forms of contracts with carriers. Dr. Walton.

386. RAILWAY MECHANICAL ENGINEERING. Locomotive tractive power, train resistance, tonnage rating, locomotive testing, comparative costs of locomotive operation, boiler incrustation, chemical control of water purifying plants, determination of hardness, acidity, etc., fuel handling, location, design, equipment and organization, with reference to roundhouses and railway shops, mechanical engineering requirements at terminals. Professor Keay.

387. RAILWAY MECH. ENG. DESIGNING. The working out of numerous problems connected with the motive power department, supplemented by visits to power houses, shops, and locomotive terminals.

Professor Keay.

Text-Books:—Henderson's Locomotive Operation; Henderson's Cost of Locomotive Operation (Railway Age Gazette).

388. RAILWAY ENGINEERING. Interlocking, block signalling, organization of operating department, operating expenses, records and reports, maintenance of way organization, accounts and programme for expenditure, track maintenance, tie renewals, ballast renewals, relaying and renewing rails, track tools, work train service, steam shovel work, betterments.

389. ELECTRIC RAILWAYS. Preliminary considerations; probable earnings; interurban lines; city lines; effects of grades; curves and distance; time tables and schedules; rolling stock; railway motors; speed and current curves; train resistance and power-time curves; speed and energy curves; performance curves; trucks; brakes; controllers; construction; roadway; ballast; rail; power stations, and power distribution; repair shops; maintenance of track, equipment and transmission line. Mr. Christie.

Reference Books:—Canadian Railway Act of 1903; Wellington's Economics of Railway Location; Lavis, Railway Location Surveys and Estimates; Webb's Economics of Railway Construction; Gillette's Earthwork and its Cost; Allen's Railway Curves and Earthwork; Manual American Railway Engineering and Maintenance of Way Assoc; Rules of the M. of W. Dept. C.P.R.; Gotshall's Electric Railway Economics; Tratman's Track and Track Work; Paine's Roadmaster's Assistant; Camp's Notes on Track.

390. SHORTHAND. Mr. Goltman.

391. TELEGRAPHY. Mr. Miller.

392. CONDUCTING TRANSPORTATION. This subject is in the nature of an extension of the subject of Railway Operation, and will involve the study of such matters as passenger and freight terminal design and control, station and yard service, wage schedules and agreements, car distribution and movement, and the analysis and control of transportation department expenses.

PRACTICAL RAILWAY TRAINING.

Arrangements have been made with one of the larger Canadian railways whereby special apprenticeship training is offered to students in the Transportation and Mechanical Courses of the University. Thus the summer vacations and a period of two years after graduation are utilized to give the students a broad practical railway experience, with a view to developing men for official positions.

The summer training for Transportation and Mechanical students will be the same for the first two years; at the end of that time students will be required to make a decision as to whether they desire to subsequently adopt the Transportation or the Mechanical Course.

The work arranged for Transportation students is as follows:—

First Year (Vacation)—Three months as special apprentice at the Railway Shops.

Second Year (Vacation).—Three months as special apprentice at a roundhouse.

Third Year (Vacation).—Three months in road service as an extra brakeman.

After graduation.—Three months in station service.
Three months in stores department.
Three months in master mechanic's office.
Six months on track work.
Three months in accounting department.
Six months with train master.

The practical training in the Mechanical Course, following the first two vacation periods, will be mainly at the railway company's shops, together with such special assignments in the motive power department as will best serve to develop the men for larger responsibilities.

In order that no valuable time may be lost to students of the first year intending to follow either of these railway courses, they should consult with the Head of the Railway Department, (Room 65, Engineering Building) before the beginning of their first vacation.

ENGINEERING SOCIETIES.

1. The headquarters of the Canadian Society of Civil Engineers are located in Montreal. Students in all departments of engineering are strongly recommended to become student members of the Society, which they can do on payment of a fee of $3.00. They are then entitled to the two volumes of the "Transactions," which are annually published, and to the use of the Society's rooms, 176 Mansfield Street. They also have opportunities of meeting the prominent engineers of the country and of being present at the fortnightly sessions, at which papers are read on current engineering subjects and works of construction.

Students are invited to compete for the prizes which are offered by the Society.

2. Students in Mining and Metallurgy are strongly recommended to become members of the McGill Mining Society, which, although a student body (see p. 246), is affiliated with the Canadian Mining Institute, the headquarters of which are in Montreal. Members of this Society receive the Transactions of the Institute without extra expense, and are entitled to attend all meetings and to compete for the prizes offered.

REGULATIONS CONCERNING PREREQUISITE SUBJECTS.

(1). No student proceeding to a degree will be allowed to take any subject, unless he has previously passed, or secured exemption, in all prerequisite subjects.*

(2). All students proceeding to a degree as above shall be classed as undergraduates and conditioned undergraduates, the latter being students with defective entrance qualifications or who have failed in one or more of the subjects of their course in the year previous to that in which they are entered.

(3). Except in special cases as provided below, no undergraduate or conditioned undergraduate shall be permitted to take any second year subject until he has passed or secured exemption in all matriculation requirements, and, similarly, no third or fourth year work may be undertaken until all first or second year subjects respectively shall have been passed or exempted.

The Faculty may waive this rule in special cases on recommendation of the Committee on Registration Standing and Promotion.

(4). Partial students not proceeding to a degree may be admitted to classes without regard to the prerequisite rule, provided that they have obtained the permission of the head of each department concerned, and have also had their courses approved by the Committe on Registration, Standing and Promotion.

(5). In the event of a partial student desiring to obtain undergraduate standing in order to proceed to a degree, he

*It is to be noted that prerequisite subjects are those which, in the opinion of the Faculty, must have been mastered before the subjects to which they are prerequisite can be intelligently studied.

Concurrent subjects are those which so supplement one another that no one of them can be intelligently studied alone. If any subject has another which is concurrent to it, both must be taken in the same session.

shall not be given credit for work already done without the usual prerequisites until he has also passed examinations or secured exemptions in such prerequisites as may be demanded by the Committee and has had his case approved by a unanimous vote of the Faculty.

(6). All undergraduates who at the close of any session have passed the examinations in all the subjects of their year, or who at the opening of the following session have removed all conditions by passing supplemental examinations in the subjects in which they have failed, may pass into the next higher year as undergraduates.

(7). All students who have conditions that have not been removed at the opening of any session are conditioned undergraduates, and come under the regulations governing prerequisite subjects. The rules concerning prerequisite subjects make it possible for a student whose failures are not too numerous or too serious, to complete his course in five years instead of four, which suffice for a student who remains in good standing throughout his course.

No student with a condition will be admitted to the second term of the fourth year as an undergraduate, nor can such student graduate with his class.

List of subjects in Faculty of Applied Science, with the Numbers of Subjects which are prerequisite and concurrent:

No.	Year	SUBJECT	Prerequisite	Concurrent
1	II	Architectural Design	4, 18, 32, 36	5
2	III	" "	1, 5	6
3	IV	" "	2, 6	7
4	I	Elements of Architecture		
5	II	Theory of Architecture	4, 32	
6	III	Theory of Design	1, 5	
7	IV	Theory of Planning	2, 6	
8	II or III	Ornament and Decoration	12, 32, 36	
9	II or III	" " "	12, 32, 36	
10	II or III	" " "	12, 32, 36	
11	II or III	" " "	12, 32, 36	
12	I	History		
13	II	"	12	
14	II	History of Architecture	12	33
15	III or IV	" " "	13, 14	34 or 35
16	III or IV	" " "	13, 14	34 or 35
17	IV	Modern Architecture	15 or 16	
18	I	Architectural Geometry		
19	III	Perspective Drawing	2	
20	I	Physics (with Arts)		21
21	I	Physics Laboratory (with Arts)		
22	III	Hygiene of Buildings	20, 24	
23	III	Heating and Ventilation	20, 24	
24	II	Building Construction	32	25
25	II	" " Detail	32	
26	III	Structural Engineering	24, 41, 44, 45, 82	27
27	III	" Detail	24, 41, 44, 45, 82	
28	IV	Graphical Statics	26	29
29	IV	Structural Design	26	
30	I	French (with Arts)		
31	IV	Architectural Practice	22, 23, 26	175
32	I	" Drawing		4
33	II	" "	18, 32, 36	
34	III	" "	33	
35	IV	" "	34	
36	I	Freehand Drawing		
37	I	Modelling		
38	II	"	37	
39	III	"	38	
40	IV	"	39	
41	I	Trigonometry (with Arts)		
42	I	Geometry (")		
43	I	Algebra (")		
44	II	Geometry (")		42
45	II	Algebra (")		43
51	II	General Chemistry	311, 312	52 or 53
52	II	" " Lab. (Eng. Students)	311, 312	51

No.	Year	SUBJECT	Prerequisite	Concurrent
53	II	General Chem. Lab. (Chem. & Met. Students)	311, 312	51
54	II	Inorg. Qual. Anal. (Chem. & Met. Students)	53	51, 55
54	III	Inorg. Qual. Anal.—Summer School (Chem., Eng. & Met. Eng. Students)	51, 52	55
55	II	Inorg. Qual. Anal. Lab. (Chem. & Met. Students)	53	51, 54
55	III	Inorg. Qual. Anal. Lab.—Summer School (Chem. Eng. & Met. Eng. Students)	51, 52	54
56	III	Organic Chemistry	51, 52	57
57	III	" " Lab		56
58	III	Physical Chemistry	54, 55	
59	III	Inorg. Qual. Anal	51, 52	60
60	III	" " " Lab		59
61	III	" Quant. "	54, 55	62
62	III	" " " Lab		61
65	III	Mineral Anal. (Chem. Eng.)	54, 55	61
66	IV	Organic Chem. & Lab	56, 57	
67	IV	Physical Chem. & Lab	58	
68	IV	Inorg. Quant. Anal. & Lab	61, 62	
69	IV	Industrial Chemistry	61, 62	
70	IV	Applied Electro-Chem. & Lab	51, 52	
71	IV	Mineral Anal. (Min'g Students)	59, 60	
72	IV	Adv. Inorg. Chemistry	58	
81	II	Materials of Construction		
82	II	Graphical Statics	194 or Physics, Arts I	
83	II	Mechanics	194	198
86	III	Mechanics	83, 198	
87	III	Strength of Materials	83, 198	
88	III	" " " Lab		87
89	III	Foundations and Masonry		87
90	III	Structural Engineering		87
91	III	Municipal "	51	
94	IV	Theory of Structures	86, 87	
95	IV	Reinforced Concrete	86, 87	
96	IV	Bridge Design	90	94
97	IV	Hydraulics	83	
98	IV	" Lab		97
99	IV	" Machines	86	97
100	IV	Municipal Engineering		97
101	IV	Hydraulics & Lab. (Short Course)	83	
111	III & IV	Elements of Elec. Eng	198, 315, 316	
112	III & IV	Elec. Eng. Lab. (Elementary)		111
113	III	Electrical Engineering	198, 317	
114	III	Elec. Eng. Lab		113
117	IV	Electrical Engineering	113, 114, 201, 320, 321	

No.	Year	SUBJECT	Prerequisite	Concurrent
118	IV	Elec. Eng. Lab. (Elec. Eng. Students)	113	117
120	IV	Elec. Light & Power Distrib.		117, 118
121	IV	Electric Traction		117, 118
122	IV	Electrical Designing	232	117, 118
131	I	English Composition		
132	II	" Summer Reading		
135	III	English (Ry. Transp. Course)	131	
138	IV	" " " "	135	
141	III	Geology, General		
142	III	Mineralogy	51	
143	III	" Determinative	51	
146	IV	Petrography & Lab	141	
147	IV	" (Advanced)	141, 142, 143	
148	IV	Ore Deposits & Economic Geol.	141	
149	IV	Geology of Canada	141	
150	IV	Phys. Geog. & Climatology		
151	IV	Crystallography	142	
152	IV	Geology, Historical	141, 142, 143	
153	IV	Geolog. Fieldwork (with 294)	141, 142, 143	
154	IV	" " (alt. a)		
171	III	Engineering Economics		
172	III	Elements of Political Economy (Ry. Transportation Course)		
175	III & IV	Engineering Law		
176	IV	Railway Law		
177	IV	Railway Economics	172	
191	I	Geometry	Matric. Geom. I	
192	I	Algebra	" Algebra I	
193	I	Trigonometry	" Trig.	
194	I	Mechanics	"Alg. I & Trig.	
197	II	Analytic Geometry	192	
198	II	Calculus	192	
201	III	Calculus	198	
211	I	Mechanical Drawing		
212	I	Carpentry & Wood Turning		
213	I	Smith Work		
214	I	Foundry Work		
218	II	Mechanics of Machines	191, 192, 194	198
219	II	Mechanical Drawing	211	
220	II	Machine Shop Work		
223	III	Mech. Eng. Laboratory		226
224	III	Mechanics of Machines	83, 218	
225	III	Machine Design		87, 231 or 232
226	III	Mech. Eng. (General Course)	51,	228
227	III	" " (Mech.Eng.Students)	51,	228
228	III	" " Lab		226, 227 or 373
229	III & IV	Thermodynamics	51, 198	

No.	Year	Subject	Prerequisite	Concurrent
230	III	Mech. Drawing (Summer Sch.)	219	
231	III	" " (Mech. Eng. Students)	230	225
232	III	" " (Elec. Eng. Students)	230	225
233	III	Smith Work (Summer School)	213	
234	III	Foundry Work (Summer School)	214	
235	III	Pattern Making	212	
236	III	Machine Shop Work	220	
237	III	Shop Processes and Managem't.		235, 236
240	IV	Mechanics of Machines	224	
241	IV	Designing	225, 231	242
242	IV	Mach. Design (Mech. Students)	225	
243	IV	Mach. Design (Elec. Students)	225	
244	IV	Power Plant Design	227	
245	IV	Locomotive Engineering	227	244
246	IV	Marine Engineering	227	244
247	IV	Heating & Vent'n of Buildings.	227	244
249	IV	Mech. Eng. Lab	227, 228	
251	IV	Thermodynamics	228, 229	
252	IV	Machine Shop Work	236	
253	IV	Mfg. Plant Design		
254	IV	Works Org. & Accounting	237	252
257	IV	Exp. Engineering	227, 228	249
261	III	General Elem. Metallurgy	51	
262	III	Metallurgical Lab		261
263	III	Fire Assaying, Pt. I	51, (52 or 53)	
264	III or IV	" " Pt. II	263	
265	III	Metal. Calculations		261
266	III	Metal. Colloquium		261
267	III	Metall. Lab., (course IX.)		261
268	IV	Summer School (Metal. Works)		
271	IV	Metallurgy (General)	261	
272	IV	" (Metal. Students)	261	271
273	IV	Metal. Lab. (Course IX)	261	271
273	III	" " (VII and VIII)		261
274	IV	" " Thesis	262 or 273	271
275	IV	Electro-Metallurgy	51	
276	IV	" " Lab		275
277	IV	Metal. Colloquium	261	271
278	IV	Metal. Machinery & Design	261	271
279	IV	Hydro-Metallurgy	261	272
291	III	Mining Engineering		
292	III	Ore Dressing & Lab	51	
293	III	Mine Mapping	346, 348	
294	III	Mining Field School	141	
297	IV	Mining Engineering	291	
298	IV	Mining Machinery & Design	81, 82, 226, 299	297
299	IV	Ore Dressing and Milling	292	
300	IV	" " Lab	263, 292	299
301	IV	" " " Thesis Work	300	
302	IV	Mining Colloquium		297, 299

No.	Year	Subject	Prerequisite	Concurrent
311	I	Physics	Mat. {Trig, Geom I and II; Algebra I}	
312	I	Physical Lab		311
315	II	Physics		
316	II	Physical Lab		315
317	III	Physics, Summer School		
320	III	Physics (Elec. Eng.)	315, 316, 317	
321	III	Phys. Lab. (Elec. Eng.)		320
322	IV	Advanced Phys. (Elec. Students)	320	
325		Heat (Advanced Physics)		
326		Light		
327		Sound		
328		Electricity & Magnetism		
329		Radioactivity		
341	I	Desc. Geometry	Matric. Geom. I.	
342	I	Freehand Drawing		
343	I	Lettering		
346	II	Surveying	191, 193	
347	II	Surveying Fieldwork		
348	II	Mapping	342, 343	
350	III	Descriptive Geometry	341	
351	III	Desc. Geometry	341	
352	III	Surveying (Miners)	346, 347	
353	III	Surveying (Civils)	346, 347	
354	III	Surveying Fieldwork	346, 347	
355	III	Mapping (Civil & Ry. Tr.)	354	
359	IV	Geodesy	351, 361	
360	IV	Geodetic Lab		359
361	IV	Geodetic Fieldwork	353, 354	
371	III	Freight Service		
372	III	Railway Engineering	83, 346, 347, 348	
373	III	Ry. Mech'l Eng	218, 311, 312	228
374	III	Organ. & Accounting		
375	III	Shorthand	131	
376	III	Telegraphy		
379	IV	Accounting	374	
380	IV	Freight Service	371	
381	IV	Railway Operation		
382	IV	Signals	372	111, 112
383	IV	Interlocking	372	111, 112
384	IV	Interlocking Design		383
385	IV	Passenger Service		
386	IV	Ry. Mech'l Eng	228, 373	
387	IV	Ry. Mech'l Eng. Design		386
388	IV	Ry. Engineering	355, 372	
389	IV	Electric Railways	355, 372	111
390	IV	Shorthand	375	
391	IV	Telegraphy	376	
392	IV	Conducting Transportation		181

FACULTY OF LAW.

LECTURES IN THIS FACULTY FOR THE SESSION 1913-1914 WILL COMMENCE ON WEDNESDAY, OCTOBER 2ND, 1913.

STUDENTS MAY REGISTER AT ANY TIME DURING THE WEEK PRECEDING THE COMMENCEMENT OF LECTURES.

MATRICULATION.

Particulars regarding the Matriculation Examination are given on pages 25 to 37.

No application for examination in June will be received after May 20th.

The attention of students who intend to practise law in the Province of Quebec, or to be admitted to the notarial profession, is called to the statutory requirements for admission to study. These will be found on page 282.

PRIZES AND MEDALS.

See pages 68 and 73.

FEES.

See page 81.

GENERAL INFORMATION.

The lectures are delivered in the rooms furnished for the Faculty in the east wing of McGill College by its munificent benefactor, Sir Wm. C. Macdonald.

Students have the free use of the Law Library of the Faculty, to which large additions are continually being made. The Library now contains all the Reports of the several Provinces of Canada. The principal reports and legal periodicals are taken. A special room for Law students is provided in the University Library. This room is open during the day, and in the evenings from eight to ten o'clock.

SPECIAL REGULATIONS.

1. The lectures will be delivered between the hours of half-past 8 and half-past 9 in the morning, and between 4 and half-past 6 in the afternoon; and special lectures in the evening at such hours and in such order as shall be determined by the Faculty. Professors shall have the right to substitute an examination for any such lecture.

2. Undergraduates shall be known as of the first, second, or third year, and shall be so graded by the Faculty. In each year, students shall take the studies fixed for that year, and those only, unless by special permission of the Faculty.

3. At the end of each college year there shall be a general examination of all the classes, under the superintendence of the professors, and of such other examiners as may be appointed by the Corporation. The examination shall be conducted by means of printed questions, answered by the students in writing in the presence of the examiners.

4. At the end of the third college year there shall be a final examination of those students who have completed the curriculum. This examination shall be conducted by written papers, which may be supplemented by an oral examination. It shall cover all the subjects upon which lectures have been delivered during the three years' course. Those students who satisfy the examiners shall be entitled, after making the necessary declaration and payment of the graduation fee, to proceed to the degree of B.C.L. There shall be no sessional examination of students who are candidates in the final examination.

5. No student shall be considered as having kept a session unless he shall have attended regularly all the courses of lectures, and shall have passed the sessional examinations to the satisfaction of the Faculty in the classes of his year.

6. The Faculty shall have the power, upon special and sufficient cause shown, to grant a dispensation to any student from attendance on any particular course or courses of lectures, but no distinction shall in consequence be made between

the examinations of such students and those of the students regularly attending lectures.

7. On the following days, when they fall within the session, no lectures will be delivered, viz.: Ash Wednesday, Good Friday, Easter Monday, and Thanksgiving Day. On the following days the morning lectures will be omitted, viz.: All Saints' Day (Nov. 1st), and Conception Day (Dec. 8th).

ADVISORY COMMITTEE.

The attention of the McGill Law Faculty has been drawn to the fact that students commencing their undergraduate course frequently need information with regard to law offices in which their services would be welcomed. For the purpose of furnishing such information and also of assisting the graduates of the Law School to obtain suitable positions in offices needing legal assistance, a number of members of the Bar have been kind enough to form themselves into an Advisory Committee. Members of the Bar desiring the assistance of students or young graduates are requested to communicate with the Secretary of this Committee, Mr. C. M. Cotton, B.A., B.C.L. The Committee consists of the following gentlemen:—C. J. Fleet, B.A., B.C L., K.C.; W. J. White, M.A., D.C.L., K.C.; E. E. Howard, B.A., B.C.L.; Lawrence McFarlane, B.A., B.C.L.

THE COURSE OF STUDY.

The curriculum extends over three years. It includes lectures upon all the branches of the law administered in the Province of Quebec, and also upon Roman law, legal history, and the constitutional law of England, and of the Dominion. Its primary design is to afford a comprehensive legal education for students who intend to practise at the Bar of the Province. In all the courses the attention of students is directed to the sources of the law, and to its historical development.

The subjects studied in the different years are as follows:—

First Year.

Constitutional Law of Canada.
Criminal Law (Introductory Course).
History of Quebec Law.
Public and Private International Law (with Second Year).
Law of Persons.
Obligations (First and Second Years, alternately).
Pleading and Practice.
Public International Law (First and Second Years, alternately).
Real Property Law.
Roman Law.

Second and Third Years.

(Alternately.)

Agency and Partnership.
Civil Procedure.
Commercial Law (two courses).
Corporations and Joint Stock Companies.
Criminal Law,
Law of Evidence.
Marriage Covenants and Minor Contracts.
Municipal Law.
Obligations (Second and First Years).
Private International Law.
Real Property Law.
Successions, Gifts and Substitutions.

The Faculty desires to impress upon English students the great importance of obtaining a familiar knowledge of French. In the practice of the profession in this Province it is indispensable that a lawyer shall be able to write and speak French. The Faculty is determined to exact a high standard in this subject, and have passed a new regulation to secure this end (see page 25). Moot Courts are held from time to time in order to afford practice in the presentation of legal arguments.

Those students who are able to take the B.A. course before entering upon their legal studies are strongly recommended to do so. Those for whom this is impossible are advised to take the first two years in the Faculty of Arts.

COURSES OF LECTURES.

Roman Law.

PROFESSOR—F. P. WALTON.

During the first part of the course the external history of the law from the early period to the codification of Justinian will be dealt with. The sources of the law will be described, and the gradual evolution explained by which the law of the city of Rome became fitted to be the law of the civilized world. A brief sketch will be given of the legal institutions of Rome in the first period and of the early constitutional history.

In the doctrinal part of the course matters of mainly antiquarian interest will be touched on but slightly. Those portions of the Roman law which have been followed most closely in the existing law of the Province, *e.g.*, property, servitudes, pignus and hypothec, and obligations will be treated in detail, and the modifications made by the modern law will be noticed. Class examinations will be held from time to time, and a first and second prize in books will be given to the two students who obtain the highest marks in these examinations.

Text-Books:—For the historical part, Walton's Historical Introduction to the Roman Law (2nd ed.); and for the Institutes, Moyle's or Sandar's Institutes of Justinian, or Girard, Manuel de Droit Romain.

Books of Reference:—Muirhead's Historical Introduction to Roman Law; Muirhead's Institutes of Gaius; Maynz, Cours de Droit Romain; Puchta, Institutionen; Maine's Ancient Law.

Constitutional and Administrative Law.

PROFESSOR:—F. P. WALTON.

The object of this course is to show the actual working of the Canadian constitution. A sketch of the constitutional history prior to Confederation is given. The B. N. A. Act is explained, and the leading cases discussed which illustrate

the respective powers of the Federal and of the Provincial Legislatures. The growth of Cabinet Government is traced, and some of the fundamental rules of the English Constitution are expounded and contrasted with those followed in other countries.

No text-book is prescribed, but students are recommended to refer to Keith, A.B., Responsible Government in the Dominions, three vols.; Todd, Parliamentary Government in the British Colonies; Houston, Constitutional Documents of Canada; Dicey, Law of the Constitution; Anson, Law and Custom of the Constitution.

Obligations—Advanced Course.

PROFESSOR:—F. P. WALTON.

Two alternate courses are delivered to students of the second and third years.

Their object is to explain important parts of the law of obligations in more detail than is possible in the general course on the subject.

The method is mainly the explanation of illustrative cases. Frequent references are made to French and English decisions.

Legal History and Bibliography.

PROFESSOR:—ARCHIBALD MCGOUN.

This course comprises an outline of the history of the law in force in the Province of Quebec.

The main source from which our law is derived is the Customary Law of France, as modified by the principles of Roman Law, embodied in several of the codes or collections of Roman Law before the time of Justinian. The Customs of France after being reduced to writing were further modified by the influence of modern Roman Law, which prevailed throughout the larger part of France. The ordinances of the French kings and the commentaries of the great jurists, from Cujas and Dumoulin down to Pothier, brought the civil law of France into the systematic form in which it was adminis-

tered in this Province. The Custom of Paris, one of the most important of those recognized in France, became formally the basis of the civil law in this country, and the ordinance of 1667 was the main authority for procedure.

Since the opening of the British régime the development of Lower Canadian civil law has proceeded independently of the civil law of France, where the Code Napoléon was passed early in the century. In Lower Canada a code on the same lines was adopted shortly before Confederation. Lower Canadian civil law has been modified by English law in commercial matters, and also by statutes passed in the Province. The criminal law has been derived almost exclusively from the criminal law of England.

The leading authorities upon the main branches of the law, with the reports of decisions of our courts, are brought under the attention of the students in this course.

Agency and Partnership.

PROFESSOR:—ARCHIBALD MCGOUN.

This course begins with the principles of the law of Mandate, as laid down in the Civil Code of Lower Canada, and treats of civil and commercial agency. The rights and liabilities of principal and agent, both between themselves and in relation to third parties, is considered, and special attention is directed to the powers of agents in selling, pledging, and dealing with the property of the principal. The law relating to factors or commission merchants, brokers, and other agents, is explained.

In partnership the right of each partner to bind his fellow-partner in virtue of the mandate reciprocally given and enjoyed, leads to the distinction between civil and commercial partnership, and the limited partnership, or *société en commandite,* is also treated of. The distinction between partnership and joint stock companies is drawn and explained.

Municipal Law.

PROFESSOR:—ARCHIBALD MCGOUN.

This course is given in alternate years with the course on Agency and Partnership.

It includes an outline of the general principles of municipal law, and particularly of municipal law in this Province, with a brief historical introduction, showing the relation to the system under the old French law, and to the system, borrowed mostly from English law, introduced by statute into this Province.

The early charters granted to the cities of Quebec and Montreal, and their subsequent modifications down to the present time, will be considered, with references to legislative enactments and to jurisprudence interpreting the provisions of the law.

Numerous other laws upon municipal organization are explained, ending with the Municipal Code of 1870, which forms, with modifications, the basis of our present system of municipal law outside of the cities and towns. The legislation upon city and town municipalities is separately outlined, the more recent tendency being towards uniformity in these matters, secured in part by the adoption of the Cities and Towns Act in 1903, applying to new municipalities, and also to those previously organized under separate enactments, but which have decided to adopt the general act to cover matters not specially dealt with in their separate charters.

Law of Corporations and of Joint Stock Companies.

PROFESSOR:—G. W. MACDOUGALL.

General course on organization of companies under the Dominion and Quebec Companies Acts. Nature of various securities; rights and powers of directors and shareholders; amalgamation and reorganization of companies; winding-up proceedings.

Persons.

LECTURER:—ARNOLD WAINWRIGHT.

This course covers the law of acts of civil status, absentees, marriage, separation, divorce, filiation, minority and interdiction.

Criminal Law.

PROFESSOR:—HON. CHIEF JUSTICE DAVIDSON.

This course includes:—

A history of the criminal law and criminal procedure of England, and of their introduction into and development throughout Canada; discussion of the Criminal Code and other statutes enacting criminal offences; of the rules of evidence in criminal cases; of the Fugitive Offenders' Act; of extradition; and, generally, of the principal features belonging to the criminal law of the Dominion.

Commercial Law, I.

PROFESSOR:—R. C. SMITH.

The subjects dealt with will include commercial sales and the law of insurance.

The course on Insurance will cover:—

(*a*) Insurance, contracts of; (*b*) marine insurance; (*c*) fire insurance; (*d*) life insurance.

Commercial Law, II.

PROFESSOR:—HON. MR. JUSTICE CROSS.

The subjects dealt with are: bills of exchange and promissory notes and banking, in one course, and shipping and carriers in another.

Civil Procedure, I.

LECTURER:—ED. FABRE SURVEYER.

This course of lectures deals with the first articles of the Code (1 to 214 inclusive) which refer to ordinary pleadings,

exclusive of incidents. The course deals also with judgments by default to appear or to plead and judgments upon confession (C.P. 418 to 420 and 527 to 548), amendments to pleadings (513 to 526), procedure in summary matters (1150 to 1162, before the Circuit Court (1120 to 1149), the Commissioners' Court and the District Magistrate's Court (1153 to 1191). It also deals with the principal incidents of law suits (C.P., 215 *et seq.*) It includes the schedules and rules of practice referring to the above-mentioned articles and forms of the most common kind of pleadings.

Civil Procedure, II.

LECTURER:—E. E. HOWARD.

The advanced course for the second and third years covers all matters of procedure not dealt with in the fiirst year course, and includes trial, provisional remedies, such as capias, attachment before judgment, injunction, etc., and special proceedings, such as proceedings relating to corporations, and public offices, mandamus, etc., as well as the rules of pleading in the more complicated classes of action. It will be divided into two parts, which will be taken in alternate years.

Successions, Gifts, Wills and Substitutions.

PROFESSOR:—P. B. MIGNAULT.

Two titles of the Civil Code, that of Successions, and that of Gifts *inter vivos* and by Will, are here explained. The order of the Code is followed, so that the whole subject is divided, somewhat unequally, into two courses given in alternate years.

First Course:—Successions and Gifts, approximately 35 lectures.

Second Course:—Wills and Substitutions, about 25 lectures.

Marriage Covenants and Minor Contracts, Prescription, Lease, and Municipal Law.

PROFESSOR:—A. GEOFFRION.

Two courses—in alternate years.

Real Property Law and Registration.

PROFESSOR:—W. DE M. MARLER.

FIRST YEAR COURSE:—25 *lectures.*

Registration of Real Rights—its objects; modes of registration; effect; the cadastral system; distinction of things.

SECOND AND THIRD YEAR COURSE:—50 *lectures, in alternate courses.*

First Course:—Mode of acquisition of immoveables—25 lectures.

In this course, a deed of sale will be analyzed and its various clauses explained: the parties; the description and the measurement of land; the obligations of buyer and seller and the security for their performance; warranty, its modifications and results; the form and registration of the deed; the rights of the wife; the distinctions between sale and other modes of acquisition, and their effects on the parties; forced sales, their incidents and results; mitoyen walls.

Second Course:—Privileges and hypothecs; servitudes—25 lectures.

Debts and causes of preference; characteristics of hypothecs—the various kinds, their history, conditions and effects; the ranking of hypothecs; the hypothecary action, its characteristics, incidents and results; privileges on immoveables; registration of privileges and hypothecs; examination of titles practically considered.

Public International Law.

PROFESSOR:—E. LAFLEUR.

Sovereignty and equality of independent states; recognition of belligerency and independence; justifiable grounds of intervention; modes of territorial acquisition; territorial bound-

aries; doctrine of exterritoriality; treaties and arbitrations; laws of war; neutrality of states and individuals; laws of blockade; contraband; confiscation; prize-courts and their jurisprudence.

The students' attention will be specially directed to treaties, diplomatic relations, and international arbitrations, in which Canada is directly concerned.

Private International Law.

PROFESSOR:—G. W. MACDOUGALL.

Distinction between the *a priori* and positive methods; sources of the positive law of Quebec on the subjects; application and illustrations of the rules for solving conflicts of law in regard to the different titles of the Civil Code; comparisons between our jurisprudence and that of England, France and Germany.

Evidence.

LECTURER:—ARNOLD WAINWRIGHT.

This course consists of an explanation of the main principles and rules of evidence in the civil and commercial matters governed by the provisions of the Civil Code.

The opening lectures will be devoted to an examination of the general principles regulating the proof of facts involved in judicial investigations relating to such matters. This will be followed by an analysis of the different kinds of evidence by means of which these facts may be proved, with an explanation of the special rules applicable to each kind. The concluding lectures will deal with the manner of producing evidence, with special reference to the examination and cross-examination of witnesses.

In the course of the lectures articles 1203 to 1244 of the Civil Code, and such articles of the Code of Civil Procedure as relate to the subject of Evidence, will be commented upon and explained.

REQUIREMENTS FOR THE DEGREE OF D.C.L.

(*Adopted March*, 1891.)

Every candidate for the degree of D.C.L., in course, must be a Bachelor of Civil Law of twelve years' standing, and must pass such examination for the degree of D.C.L. as shall be prescribed by the Faculty of Law. He shall, also, at least two months before proceeding to the degree, deliver to the Faculty twenty-five printed copies of a thesis or treatise of his own composition on some subject, selected or approved by the Faculty, such thesis to contain not less than fifty octavo pages of printed matter, and to possess such degree of merit as shall, in the opinion of the Faculty, justify them in recommending him for the degree.

The examination for the degree of D.C.L., in course, shall, until changed, be on the following subjects and authors, with the requirement of special proficiency in some one of the groups below indicated. In the groups other than the one selected by the candidate for special proficiency, a thorough acquaintance with two works of each group shall be sufficient, including in all cases the work first mentioned in each group and the first two works in the third group. In the first group one work on Public and one on Private International Law must be offered.

1. International Law.

A. Public:—

Twiss, Sir T., Law of Nations.
Hall, W. E., International Law.
Harcourt, Sir W. V., Letters by *Historicus*.
Ortolan, T., Diplomatie de la Mer.
De Martens, Droit International.
Holland, Studies in International Law.

B. Private:—

Savigny, Private International Law (Ed. Guthrie).
Bar, Private International Law (Ed. Gillespie).
Foelix, Droit International Privé.
Laurent, Droit Civil International.
Brocher, Droit International Privé.
Fiore, Droit International Privé (Ed. Pradier-Fidéré).
Dicey, Conflict of Laws.
Story, Conflict of laws.
Lafleur, E., Conflict of Laws.

2. Roman Law.

Maynz, Droit Romain.
Muirhead's Roman Law.
Girard, Manuel de Droit Romain.
Ortolan's Institutes (Ed. Labbé).
Savigny, Roman Law in the Middle Ages.
Cuq, Les Institutions Juridiques.
Puchta, Institutionen.
Krüger, Römische Rechtsquellen.
Roby's Introduction to the Digest.
Hunter's Roman Law.
Walton, Historical Introduction to the Roman Law (2nd ed.).

3. Constitutional History and Law.

Dicey's Law of the Constitution.
Stubbs' Constitutional Law of England.
Hearn, Government of England.
Bagehot, English Constitution.
Franqueville, Gouvernment et Parlement Britanniques.
Gneist, Constitution of England.
Hallam, Constitutional History of England.
May, Constitutional History of England.
Gardiner, Constitutional History of England.
Freeman, Growth of the English Constitution.
Mill, Representative Government.
Anson, Law and Custom of the Constitution.

4. Constitution of Canada and Works Relevant Thereto.

Todd, Parliamentary Government in the British Colonies.
Bourinot, Federal Government in Canada.
Cartwright, Cases Under the British North America Act.
Lord Durham's Report on British North America.
Lareau, Histore du Droit Canadien.
Houston's Constitutional Documents of Canada.
Volume O., Statutes of Lower Canada.
Maseres' Collection of Quebec Commissions.
Viollet, Histore du Droit Français.
Dilke, Problems of Greater Britain.
Bryce, American Commonwealth.
Cooley, Principles of Constitutional Law.
Curtis, History of the Constitution of the United States.

5. Criminal Law, Jurisprudence, and Political Science.

Stephen, History of the Criminal Law.
Blackstone, Vol. IV.
Harris, Principles of Criminal Law.
Holland, Elements of Jurisprudence.
Salmond's Jurisprudence.
Austin, Lectures, omitting chapters on Utilitarianism.
Lorimer's Institutes.
Amos, Science of Law.
Woolsey, Political Ethics.
Lieber, Political Ethics.
Freeman, Comparative Politics.
Aristotle's Politics, by Jowett.

APPENDIX.

The attention of intending students is called to the following provisions of the Revised Statutes of Quebec and amendments, as bearing on the requirements for the study and practice of Law in the Province:

I. Regulations Applicable to those who Intend to Become Members of the Bar.

N.B.—The articles are here abridged.

Article 4522 R.S.Q.—Examinations for admission to study and to practise law in the Province of Quebec are held at the time and place determined by the General Council.

The examinations are held alternately in Montreal and Quebec every six months; namely, at Montreal, on the second Tuesday of each January, and at Quebec on the first Tuesday of each July.

All information concerning these examinations can be obtained from the Secretary-Treasurer of the General Council. The present General Secretary is Mr. Panet Raymond, 30 St. James St., Montreal.

Article 4524.—Candidates must give notice, as prescribed by this article, at least one month before the time fixed for the examination, to the Secretary of the Section in which he has his domicile or in which he has resided for the past six months.

Article 4475.—This article provides that candidates holding the degree of Bachelor of Arts, Bachelor of Science, or Bachelor of Letters from any Canadian or British University are dispensed from the examination for admission to study. Such candidates are required to give the notice mentioned above.

Article 4526 R.S.Q. (as altered by by-law of the General Council).—On giving the notice prescribed by Article 4524, the candidate pays the Secretary a fee of $2, and makes a deposit of $125 for a complete certificate of admission to study; of $70 for a partial certificate of admission to study;

and of $200 for admission to practice, which deposit, less $30, is returned in case of his not being admitted.

Article 4531.—To be admitted to practice, the student must be a British subject, and must have studied regularly and without interruption during ordinary office hours, under indentures before a notary as clerk, or student with a practising advocate, during four years, *dating from the registration of the certificate of admission to study*. This term is reduced to three years in the case of a student who has followed a regular Law Course in a university or college in this Province and taken a Degree in Law therein.

The Revised By-laws passed by the General Council of the Bar of the Province of Quebec, passed the 14th December, 1907, provide as follows:—

Art. 53. A course of lectures on Law given and followed at a university or college in this Province, and a Diploma or Degree conferred on students by such university or college shall be held to be such as contemplated in Art. 4531 R.S.Q. only when the university or college conferring the Degree and the student who receives it shall have efficiently followed the programme herein set forth.

A regular course of law in a university or college in the Province shall be of seven hundred and fifty lessons of one hour each, on the subjects and in the proportions following:—

ROMAN LAW:—103 lectures:—This subject shall include an introduction to the study of Law and the explanation of and comments on the Institutes of Justinian and the principal Roman juriconsults.

CIVIL, COMMERCIAL AND MARITIME LAWS:—413 lectures:—Lectures on these subjects shall cover at least three years. They consist of the history of French and Canadian law, the explanation of and comments on the Civil Code of the Province of Quebec and the statutes relating to Commerce and Merchant Shipping.

CIVIL PROCEDURE:—103 lectures:—Lectures on this subject shall extend over at least two years. It shall consist of the explanation of and comments on the Code of Civil Procedure

and the statutes amending it, the organization of the Civil Courts of this Province and the history of the different judicial systems of the country; also, the special modes of procedure provided by statutes and laws of general application.

INTERNATIONAL LAW, Private and Public:—21 lectures.

CRIMINAL LAW:—69 lectures:—This subject includes the history of criminal law in Canada, the constitution of criminal courts, criminal procedure, comments on statutes relating to criminal law, the relation of criminal law in Canada to the criminal law of England. The lectures shall extend over two years.

ADMINISTRATIVE AND CONSTITUTIONAL LAW:—41 lectures:—These subjects include an inquiry into the different political institutions and the public institutions of the country, the powers, organization and procedure of the Federal Parliament and of the Local Legislature, the laws on Education and the Municipal Code.

Art. 55.—Candidates for practice who hold a Degree in Law from a university or college in this Province shall produce with their notices a certificate from the principal or rector of such university or college to the effect that they have followed a course of lectures on Law in the same during at least three years, in conformity with the by-laws of the Bar; and such certificate shall further specify the number of public lectures at which they shall have attended on each subject mentioned in the foregoing programme, during each of the said three years, and during the three years combined.

Art. 56.—The examiners shall not consider a university Degree in Law valid for the purpose of admission to the Bar if they find that the candidate has not in fact followed the programme above.

II. Regulations Applicable to those who Intend to Become Notaries.

For the regulations applicable to candidates for the Notarial Profession, see Revised Statutes of Quebec. Arts. 4774-4807.

FACULTY OF MEDICINE.

I.

Foundation and Early History.

The eighty-second session of this Faculty will be opened on Tuesday, September 30th, 1913, by an introductory lecture. The regular lectures in all subjects will begin on Wednesday, October 1st, at the hours specified in the time-table, and will continue until May 1st, 1914.

The Faculty of Medicine of McGill University is the direct outcome and continuance of a teaching body known as the Montreal Medical Institution, which was organized as a medical school in the years 1823-24 by Drs. Wm. Robertson, Wm. Caldwell, A. F. Holmes, John Stephenson and H. P. Loedel. These men constituted the first medical staff of the Montreal General Hospital, itself established in 1819. The first session of the Montreal Medical Institution opened in November, 1824, with 25 students, and the lectures were given at the house of the Institution, No. 20 St. James Street, a building situated on the north side of St. James Street, at or near Place d'Armes.

In the year 1829, the Montreal Medical Institution became, by the formal act of the Governors of the Royal Institution for the Advancement of Learning, the Medical Faculty of McGill University.

The first session of the McGill Medical Faculty took place in the winter of 1829-30, and the first university degree, a medical one, was conferred four years later, in 1833.

There were no sessions held during the political troubles of 1836 to 1839, and it is owing to this fact that this is the eighty-second instead of the eighty-fifth session of the Faculty, dating from its incorporation with the University in the year 1829.

The work of the Faculty was carried on for some years in the central part of the city, until in 1872 a building in the university grounds was provided by the Governors.

This building met the demands of the steadily increasing number of students until 1885, when an addition was found necessary.

In 1893 the late Mr. John H. R. Molson purchased property adjoining the college grounds and enabled the Faculty to erect new buildings and extensively alter and improve those already in use. The new wings comprised a large lecture room capable of accommodating 150 students and new laboratories for pathology, histology, pharmacology and sanitary science. The Library and the Museum of Pathology were also enlarged and improved. Notwithstanding the greatly increased accommodation a further extension became, in less than five years, almost imperative.

Before, however, the want of space and equipment was seriously felt, Lord Strathcona, in the names of Lady Strathcona and the Hon. Mrs. Howard, in 1898, contributed the sum of $100,000 towards the necessary extensions and alterations. These buildings, when completed, had more than twice the capacity of those previously occupied and enabled the Faculty to greatly increase the scope of its laboratory teaching. On the 16th of April, 1907, a part of these new buildings, together with the original medical building, was destroyed by fire. Fortunately the wing containing the teaching laboratories and the chief lecture room of the Faculty was saved, though to some extent damaged by water and smoke.

A magnificent new building has since been erected on a new site, at a cost of considerably over half a million dollars. It was formally opened in 1911.

Requirements for Licence.

Intending students are reminded that a University degree in Medicine does not always give a right to practise the profession of Medicine. It is necessary to conform with the medical laws of the country or province in which it is proposed to begin practice. Each province in Canada at present has its special requirements for its license, and in most provinces a special standard of general education is insisted upon before beginning the study of Medicine. Students who intend

practising in Canada are warned that in most of the provinces it is necessary to be registered four years before obtaining a license to practise. It follows that entrance qualifications must be registered in the province in which the student intends to practise at the beginning of his course in Medicine, or not later than the beginning of the second year.

For the convenience of students a list of the names and addresses of the Registrars of the Medical Councils in the several provinces is here published. Students should make themselves thoroughly acquainted at the beginning of the course with the regulations governing registration and license to practise in the province in which they intend to practise.

QUEBEC.—Dr. J. Gauvreau, 30 St. James Street, Montreal, and Dr. C. R. Paquin, Quebec, P.Q.

ONTARIO.—Dr. J. L. Bray, 170 University Avenue, Toronto, Ont.

NEW BRUNSWICK.—Dr. Stewart Skinner, St. John.

NOVA SCOTIA.—Dr. A. W. H. Lindsay, 241 Pleasant Street, Halifax.

PRINCE EDWARD ISLAND.—Dr. S. R. Jenkins, Charlottetown.

NEWFOUNDLAND.—Dr. H. Rendell, St. John's.

MANITOBA.—Dr. J. S. Gray, 358 Hargrave Street, Winnipeg, or W. J. Spence, B.A., Registrar University of Manitoba, Winnipeg.

ALBERTA.—Dr. G. Macdonald, Calgary.

SASKATCHEWAN.—Dr. G. A. Charlton, Regina.

BRITISH COLUMBIA.—Dr. C. J. Fagan, Victoria.

General Council of Medical Education and Enregistration of Great Britain.

The Matriculation Examination in Medicine of this University is accepted by the General Medical Council. Graduates of this University who desire to register in England are exempted from any examination in preliminary education on production of the McGill matriculation certificate. Certificates of this University for attendance on lectures, practical Boards in Great Britain. To obtain a license from the

work and clinics are also accepted by the various examining General Council it is necessary to pass one of the examining Boards of Great Britain in both primary and final subjects.

Detailed information may be obtained from one of the three registrars: Henry E. Allen, B.A., 299 Oxford Street, London; James Robertson, 54 George Street, Edinburgh; Richard J. E. Roe, 35 Dowson Street, Dublin.

Reciprocity with Great Britain.

The General Council of Medical Education and Enregistration of Great Britain has entered into reciprocal relations with the Medical Councils of the Provinces of Quebec, Nova Scotia, and Prince Edward Island. A holder of a degree in medicine of McGill University who has obtained the license of the Province of Quebec, may register with the Medical Council of Great Britain. He will thus be eligible for competitive examinations for the army, navy and civil service, and will be allowed to practise in Great Britain, South Africa, Australia, India and the West India Islands without further examination.

QUALIFICATIONS FOR THE DEGREE.*

1. No one will be admitted to the degree of Doctor of Medicine and Master of Surgery who shall not have attended University, or some other university, college or school of medicine, approved by this University.

2. Students of other universities, so approved, who may be admitted on production of certificates to a like standing in this University shall be required to pass an examination in primary subjects, and all examinations in the final subjects in the same manner as students of this University.

3. Graduates in Arts who have taken two full courses in general chemistry, including laboratory work, two courses in lectures for a period of five eight months' sessions in this

*It should be understood that the programme and regulations regarding courses of study and examinations contained in this calendar hold good for this calendar year only, and that the Faculty of Medicine, while fully sensible of its obligations towards the students, does not hold itself bound to adhere absolutely, for the whole of a student's course, to the conditions here laid down.

biology, including the subjects of botany, embryology, elementary bacteriology and dissection of one or more types of vertebrata, may, at the discretion of the Faculty, be admitted as second year students, such courses being accepted as equivalent to the first year in Medicine. Students so entering will, however, not be allowed to present themselves for the final examination in anatomy until they produce certificates of dissection for two sessions.

4. Candidates for the final examination shall furnish testimonials of attendance on the following branches of medical education; provided, however, that testimonials equivalent to, though not precisely the same as those stated, may be presented and accepted:—

Anatomy.	**Of which two full courses will be required.**
Practical Anatonomy.	
Physiology.	
Practical Physiology.	
Chemistry.	
Pharmacology and Therapeutics.	
Principles and Practice of Surgery.	
Obstetrics and Diseases of Infants.	
Theory and Practice of Medicine.	
Clinical Medicine.	
Clinical Surgery.	
Histology.	**Of which one full course will be required.**
Biology.	
Practical Chemistry.	
Medical Jurisprudence.	
General Pathology.	
Gynæcology.	
Hygiene and Public Health.	
Ophthalmology.	
Oto Laryngology.	
Embryology.	**Of which one course will be required.**
Medical Physics.	
Pharmacy.	
Physiological Chemistry.	
Pathological Anatomy.	
Clinical Chemistry.	
Bacteriology.	
Mental Diseases.	
Pediatrics.	
Medical and Surgical Anatomy.	
Operative Surgery.	

He must also produce certificates of having assisted at six autopsies, of having dispensed medicine for a period of three months, of having assisted at twenty vaccinations, and of having, under the direction of a properly qualified anæsthetist, administered an anæsthetic at least twice.

Courses of less length than the above will only be received for the time over which they have extended.

5. No one will be permitted to become a candidate for the degree who shall not have attended at least one full session at this University.

6. Every candidate must give proof of having attended during at least twenty-four months the practice of the Montreal General Hospital or the Royal Victoria Hospital, or of some other hospital of not fewer than 100 beds, approved by this University. Undergraduates are required to attend only the practice of the out-patient departments of the hospitals during the third year.

7. He must give proof of having acted as clinical clerk for six months in medicine and six months in surgery in the wards of a general hospital recognized by the Faculty, and of having reported at least 10 medical and 10 surgical cases.

8. He must also give proof of having attended for at least nine months the practice of the Montreal Maternity or other lying-in hospital approved by the University, and of having acted as assistant for at least twenty cases.

9. Every candidate for the degree must, on or before the 20th day of April, present to the Registrar of the Medical Faculty testimonials of his qualifications, entitling him to an examination, and must at the same time deliver to the Registrar of the Faculty an affirmation or affidavit that he has attained the age of twenty-one years.

10. The examinations to be undergone by the candidate shall be in the subjects mentioned on pp. 291 and 292.

11. The following oath or affirmation will be exacted from the candidate before receiving his degree:

SPONSIO ACADEMICA.

In Facultate Medicinæ Universitatis.

Ego, A—— B——, Doctoratus in Arte Medica titulo jam donandus, Sancto, coram Deo cordium scrutatore, spondeo:—me in omnibus grati animi officiis erga hanc Universitatem ad extremum vitæ halitum perservaturum; tum porro artem medicam caute, caste et probe exercitaturum et quoad in me est, omnia ad ægrotorum corporum salutem conducentia cum fide procuraturum; quæ denique iter medendum, visa vel audita silere conveniat, non sine gravi causa vulgaturum. Ita præsens mihi spondenti adsit Numen.

EXAMINATIONS.

Frequent oral examinations are held to test the progress of the student, and occasional written examinations are given throughout the session.

The **Pass** and **Honour** examinations at the close of each session are arranged as follows:—

First Year.

Examinations in **Biology, Embryology, Anatomy, Histology, Medica Physics, General Chemistry, Practical Chemistry and Elementary Bacteriology.**

Students who have taken one or more university courses in biology, chemistry or physics, before entering may be exempted from attendance and examination. Students exempted in these first year subjects are allowed only a pass standing, but may present themselves for examination if they desire to attain an honour standing. Students exempted from the inorganic chemistry of the first year must take the organic chemistry of the second year in their first year.

Second Year.

Examinations in **Anatomy, Physiology, Organic and Biological Chemistry, Histology and Pharmacy.**

Third Year.

Examinations in **Physiology, Physiological Chemistry, Pharmacology, General Pathology, Bacteriology, Parsitology, Clinical Chemistry, Clinical Medicine and Clinical Surgery.**

Fourth Year.

Examinations in **Clinical Medicine, Clinical Surgery, Obstetrics, Gynæcology, Ophthalmology, Oto-Laryngology, *Pharmacology and Therapeutics, Medical and Surgical Anatomy, Mental Diseases, Medical Jurisprudence, and Hygiene.**

Fifth Year.

Examinations in **Medicine, Surgery, Clinical Medicine, Clinical Surgery, Special Pathology, Gynæcology, Obstetrics, Ophthalmology, Oto-Laryngology, Dermatology.**

A minimum of 50 *per cent. in each subject is required to pass and* 75 *per cent. for honours.*

The work of one session must be completed and all examinations passed before a student is permitted to advance to the next.

Students who fail at the regular examinations in not more than three subjects of the first or second years and in not more than two subjects of the third or fourth years, may take the supplemental examinations before the beginning of the following session. These examinations will be held during the week preceding the regular opening of the session.

Students of the first, second, third or fourth years who fail in more than three subjects are not eligible for supplemental examinations and must repeat the work in the subjects in which they failed.

Students who fail to pass in a subject in which practical work is required may, at the discretion of the examiner, be required to repeat the course and furnish a certificate of attendance thereon.

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* A special examination in prescription writing will be demanded and must be passed before receiving standing in pharmacology and therapeutics.

Students who fail in one subject only of the final year may, at the discretion of the Faculty, be allowed a supplemental examination in that subject. Should the subject be one in which practical or clinical work is required, the student must furnish a certificate of additional hospital attendance or laboratory work before presenting himself for examination.

Students who fail at the examinations held at Christmas may, at the discretion of the examiners, be granted supplemental examinations at a period not less than three months after the regular examinations.

A student who, after being registered in the first, second, third or fourth years for three successive sessions, fails to qualify for advancement, or who, after being registered in the final year for three successive sessions fails to qualify for the degree, shall not be permitted to register again as a student of Medicine in the University.

Applications for supplemental examinations must be in the hands of the Registrar at least three days before the date set for the beginning of the examination and they must be accompanied by a fee of $5.00 for each subject.

FELLOWSHIPS, MEDALS AND PRIZES.

1. FELLOWSHIPS.—The Faculty has established Teaching and Research Fellowships in connection with the various laboratories.

These fellowships are of a value of five hundred dollars per annum, are open only to graduates in Medicine, and are tenable for three years.

Two are now established in connection with the department of Pathology—a Governor's Fellowship endowed by one or two of the Governors of the University, and a Faculty Fellowship established by the Faculty. Other fellowships will be announced as they are established.

The sum of $10,000 has been received by the Faculty from the Committee of the A. A. Browne Memorial Fund. With this sum a fellowship has been established, to be known as the "A. A. Browne Memorial Fellowship."

This fellowship is open to graduates of any recognized Medical School and is for the advancement of medical science, special preference being given to the subjects of obstetrics and gynæcology.

The James Douglas Research Fellowship:—The sum of $25,000 has been received from Dr. James Douglas, of New York, the proceeds to be devoted to coördinated research in the laboratories of Pathology in or associated with the University.

2. MEDALS.—See page 68.

3. PRIZES.—See page 73.

MICROSCOPES AND HÆMOCYTOMETERS.

Each student is required to provide himself on beginning his studies with a first-class microscope for laboratory and private study throughout his course. The Faculty will supply the instruments necessary for demonstrations, etc. The microscope must be of substantial construction and be provided, as a minimum, with the following accessories, $^2/_3$, $^1/_6$ and $^1/_{12}$ oil immersion, and a substage condenser. Such an instrument will last a lifetime and is an essential part of the equipment of a practitioner in medicine.

Should the student not be provided with such a microscope he may, (1) purchase a guaranteed instrument from the purchasing department of the University for the sum of $60, or, (2) on depositing a bond for $60.00, signed by two property holders of his place of residence, hire and purchase a microscope from the University by paying the sum of $7.00 per annum for five years and the further sum of $40.00 at the expiry thereof.

Any student selecting plan (2) will have the entire control of the instrument and may use it at home during the holidays, but until the final payment of $40.00 shall have been made it shall remain the absolute property of the University, and no refund of any annual payment shall be made under any circumstances.

Each student of the third year is required to have a hemocytometer, and, in order that an instrument of uniform value and accuracy may be in the hands of all students, the University has purchased a supply, which will be sold at cost price.

Text-Books.

ANATOMY.—Cunningham, Gray, Morris, Quain (Eng. Ed.), Gerrish, Piersol.

PRACTICAL ANATOMY.—Cunningham's Practical Anatomy, Ellis' Demonstrations, Holden's Dissector and Landmarks.

PHYSICS.—Carhart and Chute, Elementary Physics.

GENERAL CHEMISTRY.—General Chemistry for Colleges, A. Smith.

ORGANIC CHEMISTRY.—Remsen.

BIOLOGICAL AND CLINICAL CHEMISTRY. — Outlines of Physiological Chemistry, Beebe and Buxton; Hawk's Practical Physiological Chemistry.

Reference.—Physiological Chemistry, Abderhalden; Witthaus' Manual; Hammersten, Physiological Chemistry.

BOTANY.—Gray's Text-Book of Histology and Physiology.*

EMBRYOLOGY.—Bailey and Miller, Text-Book of Embryology; Quain's Anatomy, Vol. I.

COMPARATIVE ANATOMY.—Bourne, Comparative Anatomy of Animals.

PHYSIOLOGY.—Halliburton, Howell, Stewart, Starling, Sherrington.

Reference.—Buckmaster, Leathes, Starling (Lectures), Cannon, Hill (Recent Advances and Further Advances).

EXPERIMENTAL PHYSIOLOGY.—Alcock and Ellison.

HISTOLOGY.—Bailey, Stohr (American Ed.), Piersol, Schafer's "Essentials," Bohm and Davidoff.

PATHOLOGY.—French, Beattie & Dixon, Coplin, McFarland, Stengel, Adami's Principles of Pathology, Adami's Inflammation, Adami & McCrae's Students' Text Book.

ELEMENTARY BACTERIOLOGY.—Frost & McCampbell.

BACTERIOLOGY.—Muir and Ritchie, McFarland, Jordan, Connell.

PARASITOLOGY.—Manson, Tropical Diseases (London, 1907); Stephen & Christophers, The Practical Study of Malaria (London, 1908); Brooke, Tropical Medicine and Hygiene (London, 1908).

Works of Reference.—American Text-Book of Pathology, Ziegler, Well's Chemical Pathology, Mallory & Wright's Technique, Cattell's Post mortem Technique, Chester's Determinative Bacteriology, and Wilson on The Cell.

PRACTICE OF MEDICINE.—Osler, Tyson, Wood and Fitz, J. M. Anders, Hare.

CLINICAL MEDICINE.—Rainey and Hutchison, Musser's Medical Diagnosis, Simon, Klemperer, Vierdot's Medical Diagnosis, Sahli, Diagnostic Methods, Emmerson, Faught's Laboratory Diagnosis.

Reference—Osler's Modern Medicine, Albutt and Rolleston's Systems of Medicine; Strumpell; Dieulafoy.

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* Each student will be required to pay $2.50 in order to cover the cost of a class book, dissecting instruments and other necessaries which are supplied to him and become his own property.

HYGIENE.—Davies, Harrington, Abbott's Transmissible Diseases. Notter and Firth, Parks and Kenwood, Stevenson and Murphy, Bergey, Rohé, Glaister.

OPERATIVE SURGERY.—Binnie, Treves, Kocher, Bughard.

SURGERY.—Park, Walsham, American Text-Book of Surgery, Da Costa, Rose & Carliss, Warren & Gould.

MEDICAL JURISPRUDENCE.—Mann, Draper's Legal Medicine.

PRACTICAL THERAPEUTICS.—Hare, Forcheimer, Ortner.

PHARMACOLOGY.—Dixon, Cushny, Sollman, Wood, Hare.

Reference.—United States Dispensatory, Remington's Pharmacy.

DISEASES OF CHILDREN.—Holt, Still, Ruhrah, Thomson, Koplik, Chapin & Pisek, Sheffield.

NERVOUS DISEASES.—Church and Peterson, 5th ed., Atlas of the Nervous System and its Diseases, Jacob, Starr.

MENTAL DISEASES.—Insanity and its Treatment, Blandford, 4th Ed. Church & Peterson, 5th Ed. *Reference*: A Practical Manual of Insanity.—Brown & Bannister, Kraft Ebing.

DERMATOLOGY.—Stellwagon, Malcolm Morris, Walker's Introduction to Dermatology, Hyde and Montgomery, Crocker, Pusey, Shamberg.

OBSTETRICS.—Jewett, Hirst, American Text-Book, Jellett, Williams, Fothergill's Manual, Evans' Manual, McGill Obstetric Note Book, Renouf's Obstetric Phantom.

GYNAECOLOGY.—Hart and Barbour, Dudley, Webster, Tod Gilliam, Blair, Bell.

OPHTHALMOLOGY.—Swantzy: The Commoner Diseases of the Eye, Wood & Woodruff; De Schweinitz; Fuchs.

OTO-LARYNGOLOGY.—Politzer; Watson Williams; H. Tilley; J. B. Kyle; Gleason, Barnhill-Wales, Ballenger; J. J. Kyle; Packard; Albert Gray.

MEDICAL DICTIONARY.—Gould, Dorland, Dunglison, Hoblyn. Reference Hand-Book of the Medical Sciences.

GENERAL STATEMENT AND PLAN OF INSTRUCTION.

The period of study for the degree of Doctor of Medicine and Master of Surgery has been increased to five sessions of eight months each. The step has been taken by the Faculty only after a careful study of the requirements of a modern medical education. The crowded state of the curriculum under the old four-year system made it difficult for a student to do more than attend the required number of lectures, clinics and demonstrations, leaving little time for reading and none at all for recreation. With the additional year, by a rearrangement of the curriculum, more time will be given to the fundamental subjects of chemistry, physics and biology, while a thorough grounding will be given in the important subjects of anatomy, physiology, pharmacology and histology. The teaching in these branches, as well as in pathology and bacteriology, is largely conducted in the well-equipped laboratories of the College. The greater part of the added year is devoted to clinical instruction, as, in addition to the time provided in the third and fourth years, the fifth year will be given over practically entirely to clinical work in the wards of the hospitals. As a field for clinical study the wards of the Montreal hospitals afford opportunity not surpassed, even in the large centres of Europe, and the fact that the clinical professors in the University are the attending physicians and surgeons of these hospitals makes it possible for our students to take full advantage of this wealth of clinical material.

Under the new arrangement of the curriculum the subjects will be taken in the following order:

In the First Year: Biology, embryology, anatomy, general chemistry (theoretical and practical), physics, histology and bacteriology.

In the Second Year: Anatomy is continued throughout the session; histology is concluded at Christmas; physiology is

taken up for the first time and is continued throughout the session. There is a thorough course in organic and biological chemistry, with laboratory work and a short course in pharmacy.

In the Third Year: Physiology is continued; pharmacology is taken up, and also pathology, bacteriology, clinical microscopy, physiological chemistry and clinical chemistry. In this year students visit the hospitals for the first time, and receive instruction in small groups in the elements of clinical medicine and surgery.

In the Fourth Year: Systematic courses of lectures will be given in the following subjects: medicine, surgery, obstetrics, gynæcology, medical and surgical anatomy, materia medica and therapeutics, mental diseases, medical jurisprudence and pediatrics. In ophthalmology and oto-laryngology, in addition to a short course of lectures, instruction in the use of instruments and the examination of normal cases will be given. In this year also there will be given a course in hygiene and preventive medicine, consisting of lectures, demonstrations and practical laboratory work. Theatre clinics, ward classes and out-patient clinics will be conducted in the hospitals in medicine and surgery.

In the Fifth Year: Most of the students' time will be spent in the hospitals. Theatre clinics will be given on four days in the week in each hospital in medicine and surgery. There will also be daily ward classes to groups of students in these branches. In the out-patient departments of both hospitals there will be clinics to groups of students in the various special branches of gynæcology, ophthalmology, oto-laryngology, dermatology, orthopædics, pediatrics and genito-urinary diseases. Clinics, ward classes and demonstrations in obstetrics will be given in the new Maternity Hospital. Students of the fourth and fifth years will attend the Alexandra Hospital in groups for instruction in infectious diseases..

ANATOMY.

PROFESSOR:—FRANCIS J. SHEPHERD.

LECTURERS:—J. A. HENDERSON. J. J. ROSS. A. E. ORR.

LECTURER IN APPLIED ANATOMY:—A. T. BAZIN.

DEMONSTRATORS:—J. A. NUTTER. W. H. SMYTHE. F. MCKENTY.

ASSISTANT DEMONSTRATORS:—G. JOHNSTON. R. E. POWELL. A. FREEDMAN.

Anatomy is taught in the most practical manner possible, and its relation to medicine and surgery fully considered. For the five-year course, the subject will be taken up as for the four-year course, during the first and second years. The lectures are illustrated by the fresh subject, moist and dry preparations, sections, models, plates and drawings on the blackboard. Frequent examinations are also held.

A course of practical demonstrations in medical, surgical and topographical anatomy is also given in the fourth year of the course.

The department of *practical anatomy* is under the direct control and personal supervision of the Professor of Anatomy, assisted by his staff of demonstrators.

The methods of teaching are similar to those of the best European schools, and students are thoroughly grounded in this branch.

Every student must be examined *at least* three times on each part dissected, and no certificate is given unless the examinations are satisfactory.

Special demonstrations on the brain, thorax, abdomen, bones, etc., are frequently given. Prizes are awarded at the end of the session for the best examination on the fresh subject.

The Dissecting Room is open from 9 a.m. to 6 p.m. In consequence of the excellent Anatomy Act of the Province of Quebec, abundance of material can always be obtained.

MEDICAL CHEMISTRY AND PHYSICS.

PROFESSOR OF ORGANIC AND BIOLOGICAL CHEMISTRY:— R. F. RUTTAN.
ASSISTANT PROFESSOR OF BIOLOGICAL AND PHYSIOLOGICAL CHEMISTRY:— V. J. HARDING.
LECTURER IN GENERAL CHEMISTRY:—V. K. KRIEBLE.
DEMONSTRATOR IN GENERAL CHEMISTRY:—R. KIRKPATRICK.
DEMONSTRATOR IN CLINICAL CHEMISTRY:—R. H. M. HARDISTY.
PROFESSOR OF PHYSICS:—H. T. BARNES.
DEMONSTRATOR IN MEDICAL PHYSICS:—F. H. DAY.

Physics.

Instruction in elementary physics for students in Medicine is given in the Physics Building of the University.

This is a course for students of the first year, and consists of three lectures and two laboratory periods per week throughout the session. The experimental lectures, as well as the laboratory work, have been especially planned to meet the requirements of students in Medicine.

Text-Book: — Kimball's "College Physics" (Henry Holt and Co.).

Chemistry.

Instruction in chemistry for students in Medicine is given during a portion of each of the first three years.

First Year. During the first term the principles governing chemical action are studied in a systematic laboratory course. A printed synopsis of the work of each day is provided and necessary explanations given before beginning the work. The course includes a study of chemical phenomena; the preparation and properties of typical elements and compounds; the laws of chemical action; gravimetric and volumetric determinations, and a short course in qualitative analysis. The student is required to pay special attention to the keeping of an accurate record of his observations and calculations. Note books for this purpose are provided and are examined and criticized by the demonstrators. An examination is held at the end of the term.

During the first term a course of experimental lectures in general chemistry is given; four per week, with frequent

reviews and examinations. This course is designed to familiarize the student with the characteristics of chemical action and the conditions which modify it, rather than a detailed study of the preparation and properties of the elements and their compounds. The application of chemistry to physiology and pathology is made especially prominent. An examination in general chemistry is held at the end of the first term.

Second Year. A course of three lectures per week on organic and biological chemistry is given during the whole session. In this course the facts and theories of organic and physical chemistry, which have an essential bearing upon medical science, are first presented in the simplest form. This is followed by a more detailed study of those organic compounds and reactions which pertain to the phenomena of life. From Christmas to April laboratory work in organic and biological chemistry, two periods per week, will be given. In this course the student will study practically the chemistry of the more important organic substances which are found in the tissues, together with the chemical and physical conditions which influence their production. This course is intended to lead up to and partly include the subject matter of the usual courses in physiological and pathological chemistry.

The course includes a study of the carbon, nitrogen and energy cycles in nature; enzymes and catalysis; esterification, fats and lipoids; carbohydrates, amino acids, proteins, protein toxins, nuclein and purin bodies, urea, creatinin, indol, etc., together with the application of elementary physical chemistry to the problems of medicine and biology.

Third Year. A laboratory course of about six weeks in clinical chemistry is given to students at the end of their third year. In this course the student is made familiar with the more convenient and practical methods for the chemical and physical examination of urine, fæces, blood, stomach contents, etc., as a preliminary to their application to cases in the hospitals. In addition, exercises are given in the detection of certain poisons, food preservatives, etc., which are of easy application by the general practitioner.

An advanced optional laboratory course in clinical and biological chemistry will be given at the end of the third year to those students whose preliminary training in chemistry and standing in the pass courses shows they are able to profit by it. This course will include the more recent exact methods of determination of creatinin, ammonia, acetone, etc., in urine, Kjeldahl determinations of nitrogen, cryoscopic determinations of fluids, etc., and must be taken by all candidates for the Sutherland medal.

Students will find it greatly to their advantage to have a practical knowledge of elementary chemistry before entering upon the study of Medicine. Graduates in arts of recognized universities, on presenting certificates of having taken courses in theoretical and practical chemistry, and of having passed examinations in the same, may be exempted from the chemistry of the first year.

PHYSIOLOGY.

THE JOSEPH MORLEY DRAKE PROFESSOR:—N. H. ALCOCK.
LECTURER AND FIRST ASSISTANT:—F. R. MILLER.
LECTURERS:—A. A. ROBERTSON. T. P. SHAW.
DEMONSTRATORS:—J. D. MORGAN. A. L. GILDAY. H. A. SIMS.

The purpose of this course is to make the student thoroughly acquainted, as far as time permits, with modern physiology, both from a scientific and practical standpoint,—its methods, its deductions, and the basis on which the latter rest. The course comprises lectures, laboratory work and demonstrations.

Lectures.—These extend over two years and are illustrated by experiments, diagrams and lantern demonstrations.

Laboratory Work.—The courses are arranged to illustrate the various branches of physiology. The students work in pairs, so as to give each man the best possible opportunity of verifying the facts for himself. As medical men have to treat human patients, special care is taken to make all the practical work illustrative of mammalian and human physio-

logy, and as many exercises as possible are performed on mammals and on the students themselves.

The subjects are arranged as follows:—

1. EXPERIMENTAL PHYSIOLOGY. (A) Second year students work in the laboratory for one period of three hours per week throughout the year. The course comprises experiments on muscle and nerve, blood and heart, blood pressure and circulation, the pulse, respiration, temperature. (B) Third year students work for one period per week of three hours throughout the winter session. The course comprises experiments on blood pressure, vaso-motor nerves, blood gases, secretion of saliva, secretion of urine, digestion, special senses, central nervous system.

2. CHEMICAL PHYSIOLOGY. (C) Third year students, in addition to the biological and clinical chemistry, work during the autumn session for two periods per week of three hours each. The course comprises experiments on digestion, blood, urine, etc.

Demonstrations.—In addition to the lectures and laboratory work, special demonstrations are given from time to time on such subjects as cannot be dealt with in a large class, such as X-Ray demonstrations on the normal heart and lungs, digestion, physiology of the central nervous system, etc., etc.

Research Work.—Special arrangements are made for post-graduate work in physiology and for courses leading to the degrees of M.Sc. and D.Sc. For particulars apply to the Professor.

BIOLOGY.

The courses in biology for medical students are given in part by the Department of Botany and in part by the Department of Zoology.

A. Botany.

PROFESSOR OF BOTANY:—FRANCIS E. LLOYD.
DEMONSTRATOR:———————

BIOLOGY I.—GENERAL BIOLOGY.

A course dealing with the structure and physiology of the cell, and based chiefly upon plant materials. The earlier part

of this course is devoted to practice in the use of the microscope and in microscopic technique relating to the examination of living protoplasm. The remainder of the course deals with the microphysics and microchemistry of the living cell.

The following topics indicate the general trend and scope of the work: Colloids, crystalloids and the structure of protoplasm, mitosis and amitosis; inclusions, their occurrence and nature; the role of water; imbibition, diffusion and osmosis; semipermeability and change in this; movement, photosynthesis, respiration, digestion, secretion, excretion; reproduction, sexual and asexual; senescence and death.

Twelve lectures and twelve laboratory periods, three of each per week, during the first month of the session. The lectures will be held in Lecture Room No. 3, Old Medical Building; the laboratory exercises in the Histological Laboratory in the same building.

B. Zoology.

PROFESSOR OF ZOOLOGY:—ARTHUR WILLEY.
ASSOCIATE PROFESSOR OF HISTOLOGY AND EMBRYOLOGY:—J. C. SIMPSON.
LECTURER IN ZOOLOGY:—J. STAFFORD, M.A., Ph.D.
DEMONSTRATOR:—A. E. ORR, M.D.

BIOLOGY II.—COMPARATIVE ANATOMY.

This course is designed to introduce the student to the fundamental principles of zoology. After an introductory sketch of the scope and objects of the course, the lectures will take up in some detail the question of the structure and functions of protoplasm as illustrated by the simplest animals. This will be followed by a study of the principles governing the formation of tissues and organs, leading up to an outline of vertebrate anatomy and physiology in which special attention will be given to the mammalia.

The practical part of the course will consist of a thorough study of a series of types selected to illustrate the principles dealt with in the lectures. These types are: Amœba, paramœcium, a flagellate, hydra, lumbricus, amphioxus, scyllium, rana, and lepus.

Three lectures and three laboratory periods each week during the autumn term. The lectures will be held in the Redpath Museum and the practical work in the Histological Laboratory.

N.B. A special fee of $2.50 is charged against the caution money of each student attending the course in animal biology in order to cover the cost of instruments and laboratory note-book supplied him.

Biology III.—Embryology.

The course in embryology which follows that in animal biology, will be divided into two parts. The first part will deal with the following subjects: The nature of the reproductive cells; the maturation, fertilization and segmentation of the ovum; the formation of the germ-layers; the development of the external form of the embryo; the formation of the membranes. The second part will consist in a study of the development of the various tissues and organs in man.

Prof. Simpson.—Two lectures and two laboratory periods each week during the winter term.

HISTOLOGY.

Associate Professor:—J. C. Simpson.
Lecturer:—Walter M. Fisk.
Demonstrators:—{ L. M. Lindsay. D. G. Campbell.

The teaching of histology and histological methods extends throughout the first and second years. Lantern projections of stained miscroscopic sections will be made use of to demonstrate the normal tissues and their relations.

In the first year the students' work will commence immediately after the Christmas holidays and will continue to the end of the session. The first part of the course will consist in practical instruction upon histological technique; the second part will be devoted to the study of cytology and the more elementary tissues of the human body. Lectures will be given on elementary histology. At the end of the session a written and a practical examination will be held.

During the second year the student will study and make drawings from specimens which have already been prepared. Preceding each day's work there will be a lantern demonstration of the specimens to be allotted. Lectures will be given on advanced histology and a written and practical examination will be held at Christmas.

PATHOLOGY, BACTERIOLOGY AND PARASITOLOGY.

PROFESSOR:—J. G. ADAMI.

ASSOCIATE PROFESSOR OF PARASITOLOGY:—J. L. TODD.

ASSISTANT PROFESSORS:—A. G. NICHOLLS. O. C. GRUNER. A. M. BURGESS.

LECTURERS:—JOHN MCCRAE. H. B. YATES. J. C. MEAKINS. HANFORD MCKEE.

DEMONSTRATOR OF PATHOLOGY:—JOSEPH KAUFMANN.

DEMONSTRATORS OF BACTERIOLOGY:—F. B. GURD. E. J. MULLALLY.

DOUGLAS FELLOW IN PATHOLOGY:—A. H. MACCORDICK.

The following courses are offered in pathology, parasitology and bacteriology, respectively:—

PATHOLOGY.

1. A course in General Pathology to students of the third year. Lectures are delivered three times weekly from January until the end of the session.

2. A course of demonstrations upon the performance of autopsies for students of the third year. These demonstrations are held weekly from October until Christmas.

3. Demonstrations upon the autopsies of the week to students of the two final years. These will be given during the session by the pathologists of the Montreal General and Royal Victoria Hospitals, with conferences in which the physicians and surgeons interested in particular cases take a part, along with the Professor of Pathology.

4. The performance of autopsies. Each student is required to take an active part in at least six autopsies. These are conducted at the General and the Royal Victoria Hospitals. In addition to the actual performance of the *sectio cadaveris*, the students are expected to attend practical instruction given with each autopsy in the method of preparation and microscopical examination of removed tissues, so as to become proficient in the methods of preparation, staining and mounting.

5. Practical course in morbid histology to students of the third year; two periods of two hours each, given weekly during the winter term. Students are instructed in the staining and mounting of specimens. Following upon this, in order that the student may make the fullest study of the material, and not spend most of his time in the mechanical processes of preparing it, at each period some five or six mounted sections are distributed to each; lantern demonstrations are given of the main features of the series, and the student is expected to make drawings of the salient features of each specimen.

6. A course in Special Pathology with demonstration of Museum specimens weekly during the winter and spring terms to students of the fourth and fifth years.

In addition to the above, the staff of the department gives instruction to more advanced students who desire to undertake special work in the laboratories; this more especially during the vacations.

Throughout the year the Curator of the Museum, Dr. M. E. Abbott, assisted by Dr. J. Kaufmann, conducts a series of museum demonstrations to students of the third and fourth years in groups of twelve. The classes in clinical pathology and microscopy are described in connection with the Department of Clinical Medicine.

In connection with this Department a Research Fellowship has been established by Dr. James Douglas, of New York.

Bacteriology.

1. A course of lectures upon elementary bacteriology for students of the first year.

2. A course of lectures upon bacteriology in relation to disease, for students of the third year. Lectures three times weekly during the autumn term.

3. A practical course upon bacteriological technique and the preparation of bacteriological media to students of the first year in the winter term. This is conducted by the staff of the Bacteriological Department.

4. A practical course upon the bacteriology of infectious diseases for students of the third year: two periods of two hours each per week during the autumn term. The object of this course is to familiarize the student with the characters of the more common pathogenic bacteria and more particularly to render him proficient in the employment of the methods of clinical bacteriological diagnosis.

5. An optional course upon Infections and Immunity, by Drs. Meakins and Gurd. This course will be largely practical and will comprise a study of the phenomena of infection, together with the methods of preparation of vaccines and antitoxic sera.

Parasitology.

The main feature of this course is a series of fifteen lecture-demonstrations, copiously illustrated by lantern slides. Each lecture lasts for three-quarters of an hour; the remaining fifteen minutes of the period are devoted to an examination of specimens, both microscopical and macroscopical, and to the answering of questions put by the students. Demonstrations of the special methods used in the study of animal parasites are given in the laboratory.

Since the most important and most serious of the diseases caused by animal parasites are due to protozoa, most attention is paid to these organisms, and the diseases which are due to

more highly organized animal parasites are but briefly mentioned. In the lectures, a broad view is first given of the importance of the protozoa as pathogenic agents and of the methods by which their importance as producers of disease has been discovered. The protozoa are then considered as a whole and their functions and characters are considered. Malaria is the best known and most completely studied of all the diseases caused by protozoa; analogies to what is known to occur in malaria are frequently discovered during the investigation of minor studies of pathogenic protozoa. For this reason the parasite causing malaria, its life, its transmission, and the means of destroying it, are studied with considerable thoroughness. The diseases caused by amœbæ, by piroplasmata, by trypanosomes, by spirochætes and by protozoa of uncertain position are then considered, but with less detail than in the case of malaria. Only three lectures are spent on the worms and in alluding to those insects and other arthropoda which are immediately harmful through their parasitism upon men and animals.

PHARMACOLOGY AND THERAPEUTICS.

PROFESSOR:—A. D. BLACKADER.
ASSISTANT PROFESSOR OF PHARMACOLOGY:—J. W. SCANE.
LECTURER IN PHARMACY AND DEMONSTRATOR OF PHARMACOLOGY:—J. L. D. MASON.
DEMONSTRATOR OF PHARMACOLOGY:—F. W. NAGLE.

The lectures on this subject are graded in the following manner:—For students of the second year there is a course in practical materia medica and pharmacy, with demonstrations and exercises in the laboratory. Prescription writing and the various modes of administering drugs are explained and illustrated.

The course in pharmacology is given in the third year and consists of a systematic course of lectures on the physiological action of drugs, with demonstrations, and practical laboratory work, during which the student is given the opportunity of studying by experiment the action of the more important drugs.

In the fourth year a systematic course on the therapeutic application of drugs and remedial measures will be given, and in the fifth year a course of special demonstrations in applied therapeutics in the wards of the Montreal General Hospital.

The Eddie Morrice Laboratory, comprising pharmacological and chemical research rooms, has, through the liberality of Mr. Morrice, been fully equipped with all necessary apparatus for carrying on extended research work.

MEDICAL JURISPRUDENCE.

PROFESSOR:—D. D. MACTAGGART.

In this course the criminal and civil aspects of legal medicine are taken up and fully discussed, also lunacy and its medico-legal aspects. Special attention is devoted to the subject of blood stains, the chemical, microscopic and spectroscopic tests for which are fully described and demonstrated, also the serum test for the detection of human blood. The modes of action of poisons, general evidence of poisoning and classification of poisons are first treated of, after which the more common poisons are described, with reference to symptoms, post-mortem appearance and chemical tests. The post-mortem appearances are fully illustrated by specimens. Practical demonstrations will be given once a fortnight.

HYGIENE.

STRATHCONA PROFESSOR:—T. A. STARKEY.
ASSISTANT:—R. ST. J. MACDONALD.
DEMONSTRATOR:—F. B. JONES.

The instruction in hygiene given to the medical undergraduates has been carefully designed to meet the requirements of the practitioner in medicine.

The whole course is essentially practical in its nature and is in sharp contrast with the truly didactic method of teaching. It relates chiefly to the investigation of the causes of disease,

the channels of transmission and the adoption of modern preventive measures—all problems which are likely to confront the medical man daily in the prosecution of his duties.

One lecture and one demonstration period are allotted each week throughout the session.

The practical work includes a series of visits to places of hygienic interest.

An optional practical course more advanced than the one above referred to is open to students wishing to go into higher detail.

Special courses of instruction are given to graduates and others wishing to qualify themselves in sanitary work, or to obtain the diploma of Public Health. (See Special Courses in hygiene, page 323.

The laboratory is provided with all apparatus needed in every branch of public health work. Advanced students are furnished with separate quarters and with every facility for the prosecution of research work.

The museum is fully equipped and contains full-sized working models and apparatus illustrative of the application of all hygienic principles. (See description of museum, p. 387.)

MEDICINE AND CLINICAL MEDICINE.

PROFESSORS:—F. G. FINLEY. H. A. LAFLEUR. C. F. MARTIN.

ASSOCIATE PROFESSOR:—W. F. HAMILTON.

LECTURERS:—A. A. BRUÈRE. A. G. NICHOLLS. JOHN MCCRAE. A. H. GORDON. J. C. MEAKINS.

LECTURERS IN CLINICAL NEUROLOGY:—D. A. SHIRRES. C. K. RUSSELL.

DEMONSTRATORS:—C. A. PETERS. F. M. FRY. H. B. CUSHING. C. F. WYLDE. A. A. ROBERTSON. J. KAUFMANN. J. G. BROWNE.

ASSISTANT DEMONSTRATORS:—W. W. FRANCIS. D. W. MCKECHNIE. C. F. MOFFATT. R. H. M. HARDISTY. A. L. FOSTER. G. SHANKS.

A didactic course of forty lectures is given in the fourth year, and deals with the general pathology and treatment of disease. The course is intended as an introduction to clinical work, and is illustrated by museum specimens, plates and diagrams.

CLINICAL MEDICINE.

The instruction in Clinical Medicine is conducted in the theatres, wards, out-patient rooms and laboratories of the Royal Victoria and Montreal General Hospitals.

For the five-year course the instruction extends throughout the third, fourth and fifth years. In the third year, demonstrations are given to groups of students in the methods

of examination, and in normal and abnormal physical signs, in the wards and out-patient departments of the hospitals. This is supplemented by courses in clinical chemistry and microscopy at the College.

In the fourth year, a systematic course of didactic lectures is given, and clinical instruction is given in the theatres and out-door departments or wards of the hospitals.

The fifth year is devoted exclusively to hospital work. Each student is required to personally conduct and record the routine examination of patients assigned to him in the wards of the hospitals. He is also required to carry out the necessary examination of blood, sputum and urine in the hospital laboratories and to attend and report on autopsies on patients assigned to him. Instruction in the theatres and wards is given on four days of the week, and, as occasion offers, joint sessions are held with the pathological department, in which the clinical and pathological features of certain cases may be compared.

The out-door department of each hospital has a large neurological clinic, which is utilized for instruction, and for teaching the uses of electricity in diagnosis and treatment.

Special clinics are also devoted to the diseases of children, and groups of students attend in rotation.

Infectious diseases will be demonstrated to groups of students in the fourth and fifth years, the large number of cases under treatment at the Alexandra Hospital being available for this purpose.

Clinical Microscopy.

This course, which is given during the winter term of the third year, is essentially a practical one and is in charge of the professors and teachers connected with the department of Clinical Medicine.

It is a laboratory course, forming part of the third year instruction in medicine, and is held in the pathological laboratory of the Medical Building. The classes are held twice weekly, each demonstration lasting two hours.

Students are given instruction in the microscopic appearances of the normal and abnormal sediments in the urine, in the preparation and staining of films from pus and sputum for pathogenic bacteria, in the methods of examination of the blood, including the use of the hæmoglobinometer, hæmocytometer, microspectroscope, the determination of the specific gravity, agglutination tests, the examination of fresh films, the preparation of stained blood films and the method of making differential leucocyte counts. The instruction also comprises the microscopic examination of stomach contents and fæces, for the recognition of abnormal cellular elements, fat, blood, bacteria and animal parasites; the examination of the secretions of the respiratory tract; the examination of exudates and other pathological fluids obtained by puncture, and also the examination of hairs for the parasites of ringworm and favus.

In addition to this the student is given an opportunity of examining the various bacteria of importance in clinical medicine and surgery.

Various specimens of special interest, which are found in the hospitals from time to time, are examined as occasion arises at the demonstrations.

PEDIATRICS.

PROFESSOR:—A. D. BLACKADER.

LECTURERS:—D. J. EVANS. G. G. CAMPBELL. F. M. FRY.

ASSISTANT DEMONSTRATOR:—W. E. ENRIGHT.

A short didactic course on diseases of infancy, including the feeding of infants, is given during the session. Clinical and didactic lectures are given on diseases of the new born at the Montreal Maternity Hospital. In the Montreal General and Royal Victoria Hospitals clinical lectures and ward demonstrations on diseases of childhood are given, and small groups of students in rotation are assigned work in connection with the out-patient departments of both hospitals.

HISTORY OF MEDICINE.

PROFESSOR:—ANDREW MACPHAIL.

A course of twelve lectures will be given upon the history of medicine to all undergraduates in the Faculty who desire to inform themselves upon the progress of the science. It is the intention to examine the causes which produced the varying conceptions of medicine in times past, rather than burden the student with a narration of facts and a recital of biographies.

SURGERY AND CLINICAL SURGERY.

PROFESSORS:— GEORGE E. ARMSTRONG. J. ALEX. HUTCHISON.

ASSISTANT PROFESSORS:— A. E. GARROW. J. M. ELDER.

LECTURERS IN CLINICAL SURGERY:— KENNETH CAMERON. E. W. ARCHIBALD. W. L. BARLOW. C. B. KEENAN. A. T. BAZIN.

LECTURERS IN ORTHOPOEDIC SURGERY:— W. G. TURNER. A. McK. FORBES.

LECTURER IN GENITO-URINARY SURGERY:— R. P. CAMPBELL. J. W. HUTCHINSON.

DEMONSTRATORS OF CLINICAL SURGERY:— A. R. PENNOYER. E. M. VON EBERTS. W. H. P. HILL. C. K. P. HENRY. F. McKENTY.

ASSISTANT DEMONSTRATORS OF CLINICAL SURGERY:— F. A. C. SCRIMGER. W. J. PATTERSON. F. S. PATCH. L. L. REFORD. F. B. GURD. W. H. SMYTH. F. J. TEES.

The clinical material in the Montreal General and Royal Victoria Hospitals is very large in amount and varied in character. There are about five hundred beds in the two hospitals, and the service is a very active one. It is, therefore, possible to make the teaching in Surgery largely clinical and practical.

During the latter part of their third year the students are sent to the out-patient departments of the hospitals for instruction in the methods of examining patients. They are also taught to differentiate the abnormal from the normal, to apply bandages and to dress and apply splints.

In their fourth year they attend Surgical Clinics in the amphitheatres of the hospitals two days in the week. They receive clinical instruction, witness the reduction of fractures and dislocations and are present during the performance of operations, the details of which are explained and demonstrated. They are also taken into the wards in groups, are taught to observe symptoms, to arrive at a diagnosis and to report cases.

During their fifth year students attend four amphitheatre clinics on four days of the week. Groups of cases are here put before them for comparison. They take part in the examination of patients, in the discussion of symptoms and are encouraged to make an independent diagnosis. They witness the operations performed and have every opportunity to learn technique. In these clinics special attention is given to the consideration of the natural history of the diseases under discussion, as well as the pathogenesis, complications, prognosis and therapeutic indications.

Students, during their fifth year, are expected to do independent work in the wards, studying the cases assigned to them, reading up their cases in the medical library and doing sufficient laboratory work to enable them to make their case reports complete.

The didactic lectures are given in the New Medical Building and are illustrated by a large collection of preparations from the Museum, by plates, diagrams, drawings, and, when available, by fresh specimens.

The didactic lectures deal with the principles of surgery, and rare and unusual diseases and injuries which may not be illustrated in the wards of the hospitals. They are intended to be, so far as possible,, complementary to the clinical teaching. In these lectures the student is given a broad general

view of surgery, so that he may the more easily and intelligently follow the clinical teaching in the hospitals and more fully appreciate the many problems presented at the bedside.

OBSTETRICS.

PROFESSOR OF OBSTETRICS AND GYNAECOLOGY:—W. W. CHIPMAN.
ASSOCIATE PROFESSOR:—D. J. EVANS.
ASSISTANT PROFESSOR:—H. M. LITTLE.
LECTURERS:—J. R. GOODALL. H. C. BURGESS. H. R. D. GRAY. J. W. DUNCAN.

This course will embrace: (1) Lectures on the principles and practice of the obstetric art, illustrated by diagrams, fresh and preserved specimens, the artificial pelvis, complete sets of models illustrating the deformities of the pelvis, wax preparations, bronze mechanical pelvis, etc.; (2) bedside instruction in the Montreal Maternity, including external palpation, pelvimetry, the management and after-treatment of cases; (3) a complete course on obstetric operations with the Tarnier-Budin phantom; (4) the diseases of infancy; (5) a course of individual clinical instruction at the Montreal Maternity Hospital.

The course is carefully graded and instruction will be given separately to students of the fourth and fifth years.

Particular attention is given to clinical instruction, and a clinical examination similar to that held in medicine and surgery, forms an important part of the final examination.

A few lectures will be given on diseases of the new-born, supplemented by clinical demonstration and ward work. The lecturers and demonstrators will give special courses from time to time in the college and in the hospital, and will take the students in groups for the purpose of demonstration, examination and review.

The adoption of the five-year course necessitates some important changes in the methods and sequence of instruction.

In the fourth year will be given the regular course of didactic lectures.

The fifth year will be devoted mainly to practical and clinical work in the wards of the Montreal Maternity and in its externe service. Palpation on the living subject, theatre clinics, ward clinics, and individual instruction in the management of labor and the care of the puerperal patients will be the chief features of the course.

GYNÆCOLOGY.

PROFESSOR OF OBSTETRICS AND GYNAECOLOGY:—W. W. CHIPMAN.
ASSOCIATE PROFESSOR:—F. A. LOCKHART.
ASSISTANT PROFESSOR:—J. R. GOODALL.
LECTURERS:— { DAVID PATRICK. / H. A. LITTLE.
DEMONSTRATOR:—H. C. BURGESS.

The didactic course consists of about twenty-five lectures given once weekly, alternating with lectures on obstetrics, and extending throughout the session. The anatomy and physiology of the organs and parts concerned are first discussed. Then the various methods of examination are fully described, the necessary instruments exhibited, and their uses explained.

The diseases peculiar to women are considered as fully as time permits, somewhat in the following order: Disorders of menstruation, leucorrhœa, diseases of the external genital organs; inflammations, lacerations and displacements of the uterus; the infections of the pelvic peritoneum and cellular tissue and the uterine appendages; benign and malignant growths of the uterus; tumours of the ovary; diseases of the bladder and urethra. The lectures are illustrated as fully as possible by drawings, morbid specimens and lantern slides.

Clinical teaching, including out-patient and bed-side instruction, is given at both the Royal Victoria and Montreal General Hospitals by Professors Chipman, Lockhart, and Goodall, assisted by Drs. Patrick, Little and Burgess. A large amount of clinical material is thus available for practical instruction in this department of medicine. Numerous operations are done before the class and made the subject of remarks. In addition to the ward-patients, each hospital conducts a large out-patient gynæcological clinic, to which advanced students

are admitted in rotation, and instructed in digital and bi-manual examination and in the use of instruments for diagnosis.

Particular attention is thus given to clinical instruction, and a clinical examination in gynæcology, similar to that held in medicine and surgery, forms part of the final examination.

OPHTHALMOLOGY.

PROFESSOR:—J. W. STIRLING.
LECTURERS:—W. G. M. BYERS, G. H. MATHEWSON.
DEMONSTRATORS:—F. T. TOOOKE, S. H. McKEE.

In the fourth year there will be a didactic course of about ten lectures delivered at the University. The more unusual diseases of the eye will be fully described, while the commoner diseases will merely be touched on, the fuller consideration of the latter being reserved for the clinical lectures to be delivered in the fifth year. In addition, in the fourth year there will be instruction in the anatomy of the eye, the methods of examination, in the use of the ophthalmoscope and refraction.

In the fifth year there will be a regular bi-weekly course of clinical lectures at the Royal Victoria and Montreal General Hospitals, as well as a tutorial course in operations on the cadaver, and also one on the bacteriology of the eye.

The operative work in eye surgery is fully open to undergraduates on the day set apart for the purpose.

OTO-LARYNGOLOGY.

PROFESSOR:—H. S. BIRKETT.
LECTURERS IN RHINOLOGY AND LARYNGOLOGY:—R. H. CRAIG, H. D. HAMILTON.
LECTURER IN OTO-LARYNGOLOGY:—W. H. JAMIESON.
ASSISTANT DEMONSTRATORS OF OTO-LARYNGOLOGY:—
H. S. MUCKLESTON.
HAMILTON WHITE.
J. T. ROGERS.

The course of instruction in oto-laryngology is carried on in the out-patients' department of both the Royal Victoria and the Montreal General Hospitals, where, owing to the large

clinics, the students are afforded ample opportunity of receiving a thorough instruction in these subjects. The course is carried on in both the fourth and fifth years. In the fourth year, in addition to a short course of didactic lectures, the students receive instruction in: (a) The normal anatomy of the ear, nose and throat, as exemplified in moist dissections, dried specimens, models, stereoscopic plates and radiograms of normal conditions of the accessory sinuses of the nose and mastoid process; (b) Instruction is given in the method of using the various instruments for examining the ear, nose and throat; (c) The usual tests for hearing are thoroughly illustrated and explained; (d) Instruction is given in the recognition of normal conditions of these special organs, as exemplified by clinical material.

In the fifth year the students have presented to them only pathological conditions affecting these organs. As many cases as is possible are brought forward to illustrate the various diseases, and the clinical material thus presented is dealt with by a clinical lecture, and is further enlarged by gross pathological specimens, microscopical material and lantern slides. Eight to ten didactic lectures will also be given.

In this year the students will also receive instruction as to the care of the deaf mute, the subject being dealt with by a lecture and practical illustration of the methods of educating these unfortunate children in the Mackay Institution for Deaf Mutes.

The courses are conducted in small classes, so that personal supervision is accorded to each student. The clinics are held twice a week, and continued throughout each session. An examination at the end of the fourth year will be only clinical, but that at the end of the fifth year will be both written and clinical. A position as resident house-surgeon in the department of oto-laryngology in the Royal Victoria Hospital is open to the members of the graduating class.

MENTAL DISEASES.

PROFESSOR:—T. J. W. BURGESS.
DEMONSTRATOR:—C. A. PORTEOUS.

This course will comprise a series of lectures at the University on insanity in its various forms. The several types of mental diseases will be illustrated by cases in the Verdun Hospital, where clinical instruction will be given to groups of senior students at the close of the didactic lectures.

After clinical instruction each student is required to examine a number of cases of mental diseases for himself, making written reports thereon, and this is followed by a discussion in which the major points relative to such cases are explained.

DERMATOLOGY.

PROFESSOR:—F. J. SHEPHERD.
LECTURERS:—G. G. CAMPBELL. W. P. BURNETT.
DEMONSTRATOR:—A. FREEDMAN.

The course is entirely clinical, consisting of a weekly theatre clinic at the Montreal General Hospital, by Prof. Shepherd, on specially selected cases, and two outdoor clinics, weekly, by Drs. G. G. Campbell, at the Montreal General Hospital, and W. P. Burnett at the Royal Victoria Hospital, throughout the session. Lantern slides are made use of to illustrate the course; also a large series of coloured plates and photographs.

DOUBLE COURSES.

By special arrangement with the Faculty of Arts, it is now possible for students to obtain the degrees of B.A. and M.D., C.M., after seven years of study.

Students entering a double course who intend to practise in the Province of Quebec, are required, under the regulations of the Quebec Licensing Board, to matriculate and register with the aforesaid Board not later than the end of their second year in Arts.

For full particulars of the double course leading to the degrees of B.A. and M.D., C.M., see page —.

To secure the privileges connected with this double course, certificates of registration in the Medical Faculty must be presented at the beginning of each year to the Dean of the Faculty of Arts; and at the end of each session in the second and third years certificates of attendance on lectures and of having passed the necessary examinations in the Medical Faculty must also be presented. At the end of the fourth year certificates must be presented to show that the full curriculum of the Medical Faculty for the second year has been completed. The B.A. degree will be conferred on the completion of the work of this year.

The Faculty of Medicine strongly recommends students to take an Arts course before beginning Medicine, whenever possible, devoting special attention to chemistry, biology, physics, and German. Should a student have but one year at his disposal, he is advised to take chemistry, biology and physics of the Faculty of Arts as a preliminary training for Medicine.

GRADUATE AND ADVANCED COURSES.

The Faculty of Medicine, in 1896, established post-graduate and special courses. Recently these courses have been made almost entirely clinical in character and are given in the Montreal General, the Royal Victoria and the Montreal Maternity Hospitals. These courses will be continued in 1914.

A special detailed programme is prepared, and will be sent on application early in April of each year.

Arrangements have also been made to accommodate a limited number of such graduates who desire advanced and research work.

Commodious laboratories for advanced work have been equipped in connection with the Pathological and Clinical Departments of both the Royal Victoria and Montreal General Hospitals, and in connection with the College laboratories for physiology, chemistry, pathology and pharmacology.

Recent graduates of recognized universities desiring to qualify for examinations by advanced laboratory courses, or who wish to engage in special research work, may enter at any time by giving notice, stating the course desired and the time at their disposal.

All the regular clinics and demonstrations of both hospitals will be open to such students on the same conditions as to undergraduates in Medicine of this University.

Further details regarding courses, fees, etc., may be obtained on application to the registrar of the Medical Faculty.

SPECIAL COURSES IN HYGIENE.

In the session 1899-1900 the Faculty instituted a post-graduate course in Public Health and Sanitary Service, and since that time other courses, as described below, have been instituted.

Special instruction is given in this department, leading to the Diploma of Public Health; also for engineers, architects, and those wishing to include this subject in their final examination for the degree of Doctor of Philosophy (Ph.D.).

(1) Diploma Course in Public Health.

Candidates undertaking this course must have possessed a degree in Medicine, or other qualification for practice, for at least twelve months before he is competent to receive the diploma. The courses prescribed are as follows:—

1. A course of lectures in public health (to be omitted in the case of candidates who have attended such a course before graduation).

2. A six months' course in bacteriology, special attention being directed to the pathogenic organisms and parasites—such course to be omitted on presentation of proof that it has previously been taken.

3. A six months' course of practical study of out-door sanitary work under a medical officer of health (to be omitted in the case of medical health officers holding appointments prior to the establishment of this diploma course).

4. Three months' attendance and clinical instruction at a hospital for infectious diseases (unless such course has already been taken prior to graduation).

5. Six months' instruction in sanitary chemistry and physics, with practical work in a chemical laboratory.

The examination for the diploma will cover the following subjects:—examination of clinical cases at an infectious hospital; the drawing up of outlines for annual and other reports of officers of health; a report upon the sanitary condition of some actual locality; the chemical analysis of liquids and gases and of specimens of food; demonstration of the consideration and use of meteorological, hygienic and sanitary apparatus; microscopical examination of specimens submitted; description of specimens of human and other diseased tissues; practical examination in the employment of the usual bacteriological methods; the inspection of carcasses of animals to be used for food.

The above examination shall be written, oral and practical, and shall extend over a period of four or five days.

The following is a list of subjects included in the curriculum of study:—

(*a*) *Sanitary Chemistry*:—Examination of air, gases, water, the action of water on metals, milk, food and beverages; detection of poisons in articles of dress and of decoration; the chemistry of sewage.

(*b*) *Sanitary Physics*:—Principles of statics, pneumatics, hydraulics, light and photometry, heat and thermometry, the principles of hygrometry (only in their application to hygiene).

(*c*) *Sanitary Legislation*:—Statutes and by-laws relating to public health; the powers of public sanitary authorities.

(*d*) *Bacteriology and Parasitology*:—Modes of propagation of disease and transmission of disease between man and man, and man and animals; bacteriological analysis in relation to public health matters; natural history of microbes and animal parasites.

(*e*) *Vital Statistics*:—Calculation and tabulation of returns of births, marriages, deaths, and diseases.

(*f*) *Meteorology and Climatology,* including the geographical and topographical distribution of disease.

(*g*) *Preventive Medicine and Practical Sanitation.*

Except in special instances where exemptions may have been granted the length of the course is eight months—from the beginning of October to the end of May.

The fee for the diploma will be $50.00.

(2) Course for Civil Engineers.

This course is given to meet the requirements of engineers, particularly those making a specialty of sanitary engineering.

The object of the instruction is to elucidate the public health principles involved in engineering problems, *e.g.,* ventilation, water supplies, sewage disposal, and drainage systems.

(3) Course for Architects.

Special instruction is given in those branches of public health relating to architectural work, *e.g.,* lighting and heating, ventilation, sanitary fixtures, draining and plumbing.

(4) Course for the Degree of Doctor of Philosophy. (Ph.D.)

Hygiene, or some particular branch of it, may be taken out as a minor subject in the final examination for the Ph.D. degree. Special arrangements are made to suit the student in order that the work done in this department shall be a supplement to his major subject taken out in Applied Science.

(5) Course for Promotion in the Army Medical Corps.

As hygiene forms one of the compulsory subjects in the examination for promotion in the Permanent Army Medical Corps, special classes are held for the purpose of giving instruction in this subject—particular attention being paid to military hygiene.

The attendance in this class counts towards the requirements for the Diploma of Public Health.

Courses (2) and (3) can be commenced at any time during the session, and usually are of about three months' duration.

A small fee will be charged for each of the courses (2), (3), (4) and (5).

CLINICAL INSTRUCTION.

During the fourth year two medical and two surgical theatre clinics are given weekly in the Montreal General and Royal Victoria Hospitals. Out-patient clinics are given to groups of students twice weekly in gynæcology and once weekly in ophthalmology and oto-laryngology. In addition, on four days of the week instruction is given to groups at the bedside, in the laboratories, and in the medical and surgical out-patient departments.

In the Alexandra Hospital for Contagious Diseases, students of the fourth and fifth years receive bedside instruction in groups.

The fifth year is devoted almost exclusively to clinical work. There are four clinics weekly in medicine, four in surgery, two in obstetrics and two in gynæcology, these being supplemented by group teachings in the wards and by instruction in the clinical laboratories. In addition, groups receive instruction in ophthalmology, oto-laryngology, pediatrics, dermatology, gynæcology, neurology and genito-urinary surgery in the out-patient departments of both hospitals. At the Montreal Maternity four ward classes weekly in obstetrics are given.

Clinical Clerks in the medical and surgical wards of both hospitals are appointed every three months, and each one during his term of service conducts, under the immediate direction of the Clinical Professors, the reporting of all cases in the ward allotted to him. Students are required to show a certificate of having acted for six months as clinical clerk in medicine and six months in surgery, and are required to have reported at least ten cases in medicine and ten in surgery. The instruction obtained as clinical clerk is found to be of

the greatest possible advantage to students, as affording a true *practical* training for his future professional life.

DRESSERS are also appointed to the out-door departments. For these appointments, application is to be made to the assistant surgeons, or to the resident surgeon in charge of the out-door department.

The large number of patients affected with diseases of the eye and of the ear, nose and throat, now attending the special clinics at both hospitals, afford ample opportunity to students to become familiar with all the ordinary affections of those organs, and to make themselves proficient in the use of the various instruments used in examining them, and it is hoped that every student will thus seek to gain a practical knowledge of these important branches of medicine and surgery. Operations are performed on the eye and on the ear and nose and throat after the out-door patients have been seen, and students are invited to attend the same, and as far as practicable to keep such cases under observation so long as they remain in the hospital.

There are also special departments in both hospitals for gynæcology, pediatrics, neurology, orthopædics, dermatology and genito-urinary diseases, directed by specialists in these branches. Students are thus enabled to acquire special technical knowledge under skilled direction. The plan of teaching practical gynæcology, which has met with marked success, has been the limitation of the number of students attending each clinic to three.

Clinical instruction is given in the wards of the Protestant Hospital for the Insane at Verdun.

The clinical teaching in infectious diseases is given in the wards of the new Alexandra Hospital for Contagious Diseases.

HOSPITALS.

The City of Montreal is celebrated for the number and importance of its public charities. Among these its public hospitals are the most prominent and widely known. Those in which medical students of McGill University receive clinical

instruction are: (1) The Montreal General Hospital; (2) The Royal Victoria Hospital; (3) The Montreal Maternity Hospital; (4) The Alexandra Hospital for Contagious Diseases; (5) The Protestant Hospital for the Insane.

Montreal General Hospital.

This hospital, which for many years has been the most extensive clinical field in Canada, consists of a medical, surgical and pathological department. The medical administrative part of the hospital is now being replaced by an entirely new building, ten stories in height. The greater part of this will be ready for occupation this coming summer.

The surgical side comprises two pavilions, containing four wards, and can accommodate over 120 patients. In an intervening building are situated an amphitheatre capable of seating over 350, the operating rooms, the sterilizing rooms, and the other usual accessories to a surgical department. The completion of the new building, planned by the Board of Management and expected to take place in September of this year, will increase by three the number of operating rooms and generally amplify the present accommodation.

In this new building, which is designed to replace the present medical wards, there are three large wards of twenty-eight beds each, destined for the care of medical cases solely. In addition, there are three smaller wards for nervous, orthopædic and genito-urinary cases, besides supernumerary rooms available for demonstrations and other teaching purposes. Gynæcological and ophthalmological cases will, as heretofore, receive treatment in the old building, pending the completion of the entire plan of building.

The new portion of the hospital further provides a large students' room, to which are attached a lunch room and a lavatory.

In the raised basement is situated the Out-patient Department, of a size to meet the present needs of the hospital—over 60,000 visits a year. Besides the usual medical, surgical and special sense clinics, there is a large demonstration room,

primarily meant for skin diseases, an amphitheatre, and a students' clinical laboratory.

The recently completed pathological department is on the hospital grounds; it is a three-storey building with a mezzanine floor and a basement, and is entirely given over to laboratory work. The department is in charge of a director who, with his staff, devotes his entire time to the work in the laboratory. All the equipment needed for examination of the pathological material obtained from the wards and the out-patient department of the hospital is provided, and special rooms are set apart for bacteriological examinations, the preparation of vaccines, serum diagnoses, surgical pathology and post-mortem examinations. The large amount of pathological material obtained from the sources above indicated is made full use of by the staff of the hospital in their clinics and by the director of the department in his demonstrations held in the laboratory.

In a room set apart and equipped especially for them, the students, under the guidance of a member of the staff, may examine specimens of all kinds in connection with the cases assigned to them in the wards.

This department offers every opportunity to students, graduate or undergraduate, who are desirous of doing advanced work.

The Royal Victoria Hospital.

This hospital is situated a short distance above the University grounds, on the side of the Mountain, and overlooks the city. It was founded in July, 1887, by the munificence of Lord Mount Stephen and Lord Strathcona, who gave one million dollars for this purpose.

The buildings, which were opened for the reception of patients on the first of January, 1894, were designed by Mr. Saxon Snell, of London, England, to accommodate between 250 and 300 patients.

The Hospital is composed of five main buildings, connected together by stone bridges; an administration block in the centre and a wing on the east side for medical patients, in

immediate connection with which is the pathological wing and mortuary, and a wing on the west side for surgical patients with nurses' home attached.

The administration block contains ample accommodation for the resident medical staff and domestics. In this building there are private wards, the X-ray and hydro-therapeutic departments as well as the diet kitchen. To the north of the administration block has been erected the large out-patients' department. The patients' entrance, the dispensary and admission rooms are also situated in this building. This wing was opened for patients during the winter of 1899-1900.

The medical wing contains five large wards, besides private and isolation wards, and wards for oto-laryngology and ophthalmology. There is also a medical theatre with a seating capacity of 250, and three rooms adjacent to it for clinical chemistry and other purposes. North of this wing and in direct connection with it are the pathological laboratories and mortuary.

In this wing are situated the mortuary proper, the chapel, a post-mortem room capable of accommodating 200 students, and laboratories for the microscopic and bacteriological study of morbid tissues, some designed for the use of students and others for post-graduation courses and special research. Special laboratories for pathological chemistry, experimental pathology, bacteriology and photography are also provided.

The Surgical wing contains five large wards, and several private wards; also two surgical theatres with a seating capacity for 250, with six rooms adjacent for preparation of patients.

The Montreal Maternity.

The Faculty has great pleasure in announcing that the Corporation of the Montreal Maternity has erected a large new building, fitted with the most modern appliances, situated at the corner of Prince Arthur and St. Urbain streets. Students will therefore have greatly increased facilities for obtaining a practical knowledge of obstetrics and diseases of infancy. An improved Tarnier-Budin phantom is provided

for the use of the students, and every facility afforded for acquiring a practical knowledge of the various obstetric manipulations. The Institution is under the direct supervision of the Professor of Obstetrics, who devotes much time and attention to individual instruction. Students who have attended the course in obstetrics during the winter and spring terms of the fourth year will be furnished with cases in rotation, which they will be required to report and attend till convalescent.

An Externe service in connection with the Maternity has been established, one of the resident assistants and a nurse being sent out to attend deserving cases in their own homes. Students who have had six cases in the hospital and who notify the Medical Superintendent of their desire to do externe work are assigned to these cases in rotation, accompanying the resident officers whenever possible and conducting the case under his supervision.

Clinical obstetrics has been placed upon the same basis as clinical medicine and surgery, and a final clinical examination has been instituted. Every student must give in two complete clinical reports of cases observed by himself before presenting himself for the final clinical examination. Marks are given for these reports in the final examination for degree. Regular courses of clinical lectures are given throughout the session, special attention being paid to the important subject of infant feeding. The Walker-Gordon process of modifying milk is explained and demonstrated. At the regular Saturday clinic the work of the past week is reviewed, and an opportunity is given for the examination of patients and the discussion of points of interest in diagnosis and treatment.

During the autumn and winter terms the assistants in the department give a palpation course, clinical demonstrations in the wards and instruction in operative work on the phantom. Students will find it very much to their advantage to pay special attention to their clinical work during the summer preceding their fourth year.

Two resident medical officers are appointed yearly to assist the Medical Superintendent and work under his direction.

Alexandra Hospital.

The Alexandra Hospital for the treatment of contagious diseases is available for purposes of clinical instruction. This hospital, situated on Charron street, Point St. Charles, has a capacity of over 130 beds. There are three large individual pavilions, an observation pavilion, an isolation ward, a central kitchen and an independent administration building, which contains a very complete laboratory and a dispensary. It is the intention of the Governors of the Hospital to erect a fourth pavilion for the treatment of erysipelas. For the present the three most prevalent contagious diseases, measles, diphtheria, and scarlatina, are treated, and ample provision has been made for the accommodation and instruction of students. Besides, clinics to groups of students of the fourth and fifth years are given throughout the session.

MUSEUMS.

The Faculty has during recent years devoted special attention to the development of its museums in the several departments in which objective teaching is of especial value in the education of the student.

Through the benefaction of Lord Strathcona, a splendid new museum has just been erected which is undoubtedly the finest structure of its kind in America. The museum projects from the northwestern side of the new medical building, of which it forms a central feature, and faces the Royal Victoria Hospital. It is in the form of a rectangular cross and is in three stories, of which the upper contains the anatomical collections, while the two lower floors are devoted to the museum of pathology. The wings and free ends of the cross give space for three large alcoves on each floor, which are flooded with light from without and from a central light well. The interior is finished in white marble and stucco, and the different stories are connected by circular staircases. This beautiful interior has been fitly equipped by the University with handsome steel and plate glass cases, of dust-free construction, made after special designs by the Edwards Com-

pany of Syracuse, N.Y., and the Snead Manufacturing Company of Jersey City, N.J. In these cases the specimens are preserved and classified, and here they may be freely studied.

For description of particular museums, see pages —.

LIBRARY.

LIBRARIAN:—PROF. H. S. BIRKETT.
ASSISTANT LIBRARIAN:—MISS M. R. CHARLTON.

"The history of the Library is the history of the Faculty."
Professor Hall.

The library occupies the central part of the new building, the whole of the front of the second and third floors, as well as a portion of the first floor being used. On the third floor is the magnificent reading room, 76 x 24 feet, exceptionally well lighted and capable of accommodating 100 readers. On this floor also is the staff journal room and the private office of the Librarian.

The second floor contains the stack room, which is equipped with book stacks having a total capacity of sixty thousand volumes.

Since the transfer of the medical library to its new home many valuable additions to the library have been made. The collection, which is one of the finest to be found in any medical school on this continent, has been recently enriched by the addition of over one thousand volumes of rare and valuable works on ophthalmology. These books are the gift of Dr. Casey Wood, of Chicago, an old Montrealer, who for years has occupied a leading position among the ophthalmologists of America. The books now presented to McGill represent practically everything of value that has been written on ophthalmology up to the year 1850. They constitute what Dr. Wood designates as the first half of his library, and it is his intention to donate later the second portion, which is equally valuable. On the completion of Dr. Wood's gift the medical library will possess a department of ophthalmology which will be unsurpassed.

A complete list of donors is published in the Yearly Report of the Library.

DENTAL DEPARTMENT.

(Faculty of Medicine).

MATRICULATION.

Students in Dentistry must pass the matriculation examination required of students in Medicine, for particulars of which see page 24. Those who intend to practise in the Province of Quebec must pass the matriculation examination of the Dental Association, if they do not hold a degree in Arts or Medicine from a recognized British or Canadian university. A certificate of having passed this examination will be accepted as a full equivalent for the matriculation examination of this University.

The fee for the Dental Association examination is $20.00, and is payable to the Secretary, Dr. Eudore Dubeau, 308 Sherbrooke street east, Montreal, from whom all further information can be obtained.

COURSE OF INSTRUCTION.

The course in Dentistry extends over four sessions of eight months each and leads to the degree of D.D.S. In the first year the course is the same as that followed by students in Medicine. In the second year, students in this department will finish their course in anatomy at Christmas. The course in chemistry will not be so extensive as that for Medical students and special lectures will be given in physiology, pharmacology and histology. The pharmacy is the same as in the medical course. There will also be courses in operative dental technique, prosthetic technique and dental anatomy for second year students. The practical work of the last two years, which has special reference to dentistry proper, will be carried on chiefly at the Dental College, special courses of lectures being delivered at the McGill Medical College.

CLINICAL INSTRUCTION.

The establishment of an out-patient clinic in dentistry by the authorities of the Montreal General Hospital has enabled the University to offer its students an abundance of clinical material. During the third and fourth years the greater part of the student's time is spent in the clinic, where he receives the personal attention of a competent staff of instructors.

FEES.

See page 80.

ADMISSION TO PRACTICE.

In accordance with the provisions of the Dental Act, candidates intending to practise in the Province of Quebec, must sign indentures, before a Notary Public, with a licentiate of Dental Surgery in active practice in the Province, four years before being admitted to the profession. He should, therefore, register with the Dental Board at the beginning of his College course.

The requirements for admission to study and practice in the other provinces of the Dominion (British Columbia excepted) will be learned by corresponding with the Secretary of the Dominion Dental Association.

REQUIREMENTS FOR THE DEGREE.

The degree of Doctor in Dental Science (D.D.S.) will be conferred only on candidates who (1) have attained the full age of twenty-one years, (2) are of good moral character, (3) have attended for four regular sessions, (4) have paid all the required fees, and (5) have passed the prescribed examinations.

DEPARTMENT OF MUSIC.

LOCAL EXAMINATIONS.

Public local examinations are now held yearly at various centres throughout the Dominion by examiners sent out by the University.

These examinations may be looked upon as preparatory to the examinations for diplomas and degrees in Music granted by the University. There are in most of the subjects five grades, and certificates gained in the higher grades will exempt the candidate from certain portions of the examinations for a diploma or degree.

DIPLOMA OF LICENTIATE IN MUSIC.

Candidates for this diploma may elect to be examined either in:—

Theoretical subjects and composition.....(Class I)
Practical subjects as performers.....(Class II)
Both theory and practice as teachers.....(Class III)

The candidate must pass three examinations.

First Examination:—

(a) Rudiments of music, including sight reading and ear tests.
(b) Harmony in four parts up to, and including, dominant 9th. (A practical test will be substituted for performers.)
(c) Counterpoint in two parts. (Practical test substituted for performers.)
(d) Chief subject of study.

The possession of a Grade I certificate of the local theoretical examinations will exempt candidates in class I from this examination. In class II, exemption may be claimed if the candidate has passed Grade I (practical) and Grade II or Grade III (theoretical) of the local examinations.

In class III, candidates must hold Grade I (theoretical) and Grade II (practical) certificates in order to claim exemption.

In the *Second and Third examinations,* between which a year must elapse, the requirements for classes I and III are, on general lines, similar to those for the first and second Mus. Bac. examinations respectively. In the case of class II, practical tests are substituted for many of the theoretical tests. Candidates in class III will, in the final examination, have to pass in "The Art of Teaching Music," which will be partly *viva voce* and partly paper work.

In both the Licentiate and Mus. Bac. examinations, considerable latitude is allowed in the choice of a second practical study. Total exemption from examination in it will be allowed if the candidate possesses recent certificates gained in the higher grades of the local examinations in that subject.

Those holding the diploma of L. Mus. can at any time during the five years immediately following their passing that examination enter for the Mus. Bac. final examination, but they must pass the Matriculation examination.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF MUSIC.

Candidates for the degree must have passed the following examinations:—

1. The Matriculation Examination. (See page 26.)
2. The First Examination in Music, at the end of the first year.
3. The Second Examination in Music, at the end of the second year.
4. The Final Examination.

The particulars of the work for each of the above examinations are as follows:—

First Examination in Music.

(a) Advanced rudiments.
(b) Harmony in 3 and 4 parts.
(c) Counterpoint up to 3 parts.
(d) Form and analysis. Questions will be given on accent, cadence, metre, rhythm, phrasing, etc., and on form, shown in the work of the early classicists (Scarlatti, Bach, Mozart and Haydn).

(e) General outlines of musical history.

(f) Chief and second practical study (or instead of one of these the composition of a song (or songs) or a miniature suite for piano (or violin and piano or any other combination).

Second Examination in Music:—

(a) Harmony in not more than 4 parts.

(b) Counterpoint in not more than 4 parts.

(c) Canon in 2 parts and fugal exposition up to 4 parts.

(d) History of music from the 16th century to the present day, with some critical knowledge of a few compositions, either studied during the year or prescribed beforehand.

(e) Form and analysis.

(f) Elementary knowledge of acoustics, or physiology of voice.

(g) Chief and second practical study or, instead of one of these, the composition of:—(1) A movement in sonata form for pianoforte (or piano and violin, or any other combination), or (2) chorus with independent accompaniment, or (3) suite for strings.

Final Examination in Music:—

(a) Harmony up to 5 parts.

(b) Counterpoint up to 5 parts.

(c) Double counterpoint in 8ve, 10th and 12th.

(d) Canon and fugue in 4 parts.

(e) History of music from the earliest to the present time.

(f) Form and analysis. A knowledge will be required of such works as the following:—Bach's 48 Preludes and Fugues, Beethoven's Sonatas, Schubert, Schumann and Brahms' Songs, Mendelssohn's Psalms and such Oratorios as Elijah and St. Paul. (The candidate should send in a list of works, in which he or she is prepared to be examined, a few weeks before the day of examination.)

(g) Instrumentation—a knowledge of the compass and capabilities of all instruments in the modern orchestra, and the scoring of a given passage in a given time, also the reading at sight of a short excerpt from an easy score of an early work of Mozart or Beethoven.

(h) Chief and second practical study (or in lieu of both of these a composition can be sent in by the candidate containing 4-part chorus, a solo or duet, an unaccompanied quartette and a 4-part fugue—the whole scored for stringed instruments with independent accompaniment).

Graduates in Music of other universities can be admitted to an "ad eundem" degree in Music of this University on payment of the necessary fees, if they are intending to proceed to the McGill degree of Mus. Doc.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF MUSIC.

Bachelors of Music of McGill University, after the lapse of a period of three years from the time of taking the degree of Bachelor of Music, may proceed to the degree of Doctor of Music, the requirement for which is a composition in extended form, such as an oratorio, opera or cantata. This exercise must have as its first number an introductory orchestral movement in the usual concert-overture form, and must contain eight part writing and fugal treatment. It must be scored for a full orchestra. This original and unaided composition, if approved of, may be publicly performed by the candidate in the University or some other fit and proper place, at the discretion of the University. In addition, an examination in the higher forms of composition shall be necessary, together with a critical knowledge of the full scores of certain prescribed works.

Further particulars with regard to degrees and diplomas in Music, as well as those relating to local examinations, not included in the above, will be found in the special Music Syllabus obtainable on application to the secretary of the McGill University Conservatorium of Music.

DEPARTMENT OF PHYSICAL EDUCATION.

FOR MEN.

Medical Director of Physical Education:—F. W. Harvey, B.A., M.D.

Instructor: Arthur Stanley Lamb, B. P. E.

Gymnastic classes are held at the University gymnasium. These classes are open to men students of all faculties. The work consists of graded educational exercises, with and without apparatus; gymnastic games, basket ball and dancing. While the exercises are largely of a recreative nature, the main purpose is to promote organic vigour, normal development and general physical efficiency.

Special attention is given to the application of exercise in cases of weakness or deformity.

The Wicksteed silver and bronze medals for physical culture (the gift of the late Dr. R. J. Wicksteed) are offered for competition to students of the graduating class and to students who have had instruction in the gymnasium for two sessions; the silver medal to the former, the bronze medal to the latter.

The award of these medals is made by judges appointed by the Corporation of the University.

Every competitor for the silver medal is required to lodge with the judges, before the examination, a certificate of good standing in the graduating class, signed by the Dean or Registrar of the Faculty to which he belongs, and the medal will not be awarded to any student who may fail in his examination for the degree.

All students on entering the University are required to pass a physical examination see page 41.) By such an examination any physical defect or weakness may be discovered early, and the student will be advised with regard to treatment. For those defects amenable to treatment by exercise or other hygienic measures, individual attention will be given and

students will be advised as to what forms of exercise will be likely to prove beneficial or harmful. Lectures on personal hygiene will be given to first year students.

FOR WOMEN.

Medical Director of Physical Education:—F. W. Harvey, B.A., M.D.

Physical Director:—Miss E. M. Cartwright, Graduate and former Assistant of the Chelsea College of Physical Education, London, England.

Classes in educational gymnastics are conducted for all undergraduate students in the gymnasium of the Royal Victoria College (see page 363). All students on entering the University are required to pass a physical examination (see regulation on page 41), and are also required to pass satisfactory physical tests before taking part in any of the outdoor or indoor physical exercises organised by the Physical Department, whether educational or recreational.

Undergraduate students of the first and second years are required to attend two educational gymnastic classes per week. Undergraduate students of the third year are required to attend one educational gymnastic class per week. Undergraduate students of the fourth year wishing to enter educational gymnastic classes are expected to attend regularly. Undergraduate students entering the Royal Victoria College in their third or fourth year are required to attend the educational gymnastic classes twice a week, for one session, unless excused for reasons deemed sufficient by the Department.

Beginning with the freshman class of 1913-14, work in the Physical Education Department throughout the four-year course (amounting to 140 hours in all) will be required of all undergraduate students, in place of the 144 hours now required during the first three years. These periods will be used for instruction in personal hygiene and for educational, remedial and recreative gymnastics, according to the physical requirements of the individual. No student will be asked to

do work unsuited to her physique, and students debarred from exercise of any kind will be dealt with separately and carefully advised.

Reports of attendance in physical education will be regularly sent to Faculty.

Strathcona Prizes.—Three first prizes of $8, $10, and $12, and three second prizes of $5, $6, $9, are open to students for competition in the second, third and fourth years respectively. Two prizes of $5 are offered for competition to the students of the first year; one for students who have taken part in educational gymnastics at school, and the other for students who have had no previous physical training.

All competitions will be held under the following regulations:—

1. Competitors will be awarded 50% of the marks on the work of the session.

2. No prize shall be awarded unless the judges consider the work up to a standard of 75%.

3. The prizes shall not be awarded in the second, third, and fourth years should the winner fail to obtain her full academic standing. The prizes in the first year shall not be awarded if the winners fail in more than one subject at the sessional examinations.

4. Competitors will be judged on the work taught in the Physical Education Department during the session, the Physical Director arranging all details concerning the competition. A programme of the competitions will be posted not later than March 1st.

5. Judges for these competitions shall be appointed yearly by the Corporation, on the recommendation of the Department.

DIPLOMA COURSES.

The departments of Education and Physical Education offer the following courses:—

1. For Undergraduates of the Fourth Year (men and women.) [See Department of Education, Faculty of Arts, page 145.]

A course of 20 lessons of 1½ hours each on the principles and practice of physical education. The course will cover elementary anatomy, physiology and hygiene, the theory of gymnastics and class teaching.

Students will be required to give four lessons (practical) to children, in the presence of the physical director, and to take an examination. Miss Cartwright, Dr. Harvey, Mr. Lamb.

Students who satisfactorily complete this course are entitled to certificate "B" of the Strathcona Trust.

2. To train Teachers of Physical Education (men and women). The following course is given, which leads to a diploma on successful completion of three sessions' work, whether taken in summer or in winter.

The course is intended (1) to train teachers of Physical Education for public school work, recreational and social work; (2) to give teachers already at work the opportunity of obtaining extra qualifications. Students, therefore, who desire a partial course only may take separate subjects if the Medical and Physical Directors approve.

Practice in Teaching. Great stress will be laid on the practice of teaching. Owing to exceptional facilities, every student will be given the opportunity to conduct classes, games and dances, with helpful supervision from expert teachers.

Entrance Requirements. It is highly desirable that the teachers of Physical Education shall have reached a good standard of general culture, hence the following will be required for entrance to the course:—High School Leaving Certificate, or Matriculation, or the Model Diploma of the Province of Quebec, or equivalent qualification, at the discretion of the Committee.

Medical Examination. All students will be required to pass a satisfactory physical examination before proceeding with the course.

Diploma. Full courses will be given in the first, second and third years, providing the number of applications is sufficient. The work of the successive years in each subject will be arranged progressively.

Examinations will be held in all regular subjects and certificates will be granted at the end of each year for work done. Forty per cent. required for pass; 60% for second class; 75% for first class; but in all cases at least 60% must be made on teaching. The Diploma, granted on successful completion of the third year, is recognized by the Protestant Board of School Commissioners of Montreal as qualifying for the salary of specialist in the public schools. Credit towards a full session's work will be given to all attending a partial course on passing the examination. Students taking the full course, but failing to gain the certificate, will be credited with the subjects in which they pass.

COMMITTEE.

CHAIRMAN:—J. A. Dale, M.A., Professor of Education, McGill University.

MEDICAL DIRECTOR:—F. W. Harvey, B.A., M.D., McGill University.

PHYSICAL DIRECTOR:—Ethel M. Cartwright, G.C.C.P.E., Royal Victoria College.

Ethel Hurlbatt, M.A., Warden, Royal Victoria College.

H. J. Silver, B.A., Superintendent of Protestant Board of School Commissioners, Montreal.

C. B. Powter, Supervisor of Physical Education, Protestant Board of School Commissioners, Montreal.

3. PLAYGROUND COURSE. With the co-operation of the Parks and Playgrounds Association, a course is offered to any who wish to make themselves competent in this increasingly important branch.

COURSES OF INSTRUCTION.

PHYSIOLOGY AND HISTOLOGY.—Prof. J. C. Simpson.

ANATOMY AND APPLIED ANATOMY.—Ethel M. Cartwright, Dr. F. W. Harvey.

PERSONAL AND SCHOOL HYGIENE.—Ethel M. Cartwright, Dr. F. W. Harvey, Dr. F. B. Jones.

SOCIAL AND PUBLIC HYGIENE.—Dr. F. B. Jones.

First Aid to the Injured.—Dr. F. J. Tees.

Physiology of Exercise.—Dr. F. W. Harvey.

Anthropometry.—Dr. F. W. Harvey.

Physical Diagnosis.—Dr. F. W. Harvey.

Corrective Gymnastics.—Dr. F. W. Harvey.

Orthopaedics.—Dr. F. W. Harvey, Dr. MacKenzie Forbes, Dr. W. G. Turner.

History of Physical Education.—Prof. J. A. Dale, Ethel M. Cartwright.

Kinesiology.—Ethel M. Cartwright.

Class Management and Teaching.—Ethel M. Cartwright.

Pedagogy.—Prof. Dale.

Gymnastics.—Ethel M. Cartwright, C. B. Powter, A. S. Lamb.

Dancing.—Ethel M. Cartwright.

Games and Athletics.—Sadie Roberts, E. M. Cartwright, A. S. Lamb.

Theory and Practice of Play.—A. S. Lamb.

Experimental Psychology.—Dr. W. D. Tait.

Heredity and Evolution.—Prof. J. C. Simpson.

Manual Work.—

Kindergarten Games and Songs.—

INSTRUCTION IN MILITARY SUBJECTS.

Students desirous of qualifying for commissions in the British Army or the Permanent Force in Canada are able to obtain the necessary instruction at the University. The qualifications are as under:—

General Qualifications of Candidates.

A candidate for nomination:—

(a) Must be between the ages of 21 and 25 (for Indian Army, 24) on the 15th January for a winter nomination, or the 15th July, for a summer nomination.

(b) Must be unmarried.

(c) Must be, in the opinion of the Army Council, in all respects suitable to hold a commission in the regular army.

(d) Must produce a certificate of good conduct from the head or other competent authority of the university, or a college of the same, in which he has resided.

Academic Qualifications.

A candidate must:—

(a) Reside for three academic years at the university.

(b) Take a degree in the Faculty of Arts, Applied Science, or Law.

Military Qualifications.

(a) A candidate for nomination must attend a course of lectures in military subjects and qualify at a subsequent examination.

(b) Must be an efficient member of the University contingent of the Officers' Training Corps each year, from the date of his registration as a candidate for a commission in the regular army.

(c) Must, during his residence at the University, be attached to a regular unit and obtain a satisfactory certificate as to his proficiency.

The attachment will be for a period of six consecutive weeks in the case of a candidate who, by the date of nomination will have been returned as an efficient member of the Officers' Training Corps contingent in two or more years, or, in cases where there is no Officers' Training Corps contingent, for six consecutive weeks in each of two consecutive years, or 12 consecutive weeks in one year. Before such attainment he will be required to have been instructed in squad drill, in accordance with infantry training, under arrangements made by the university to which he belongs.

(d) Must be passed by a medical board as physically fit.

(e) Must be nominated by a board appointed for that purpose.

Course of Lectures.

The lectures in preparation for the examination in military subjects are as follows:—

SUBJECT	Number of Lectures	Marks Assigned
Group A.		
(1) Military History and Strategy (two papers)	28	1000
(2) Military Tactics (two papers)	28	1500
Group B.		
(1) Field Engineering (two papers)	20	1000
(2) Map Reading and Field Sketching (one paper)	20	500
Group C.		
Military Administration and Organization (one paper)	12	250

Students in the Faculty of Applied Science are advised to attend these lectures. Marks have been assigned to the different subjects of the course on the same basis as that adopted for the obligatory subjects for the degree in this Faculty, and the marks obtained by a student taking this course will be taken into consideration in determining his

standing at the close of the session, as is done in the case of other optional subjects.

In the Faculty of Arts the subject of military history and strategy and any other subject in group A or B is counted as a half-course in the third or fourth year. In the Faculty of Applied Science an option is allowed between field engineering and engineering law of the regular course for the third or fourth year.

To qualify, a candidate must, in addition to passing the practical test (which consists of:—(1) questions on map reading on the ground; (2) enlarging a portion of the ½ or 1 inch to the mile ordnance map, and inserting relevant detail in connection with a tactical idea), obtain .4 in each paper of groups A and B, and .5 in the aggregate of marks allotted to each group (A, B and C). Where, however, the three groups are taken together at one examination, a candidate may be considered to have qualified, if he obtains .4 in each paper and .5 of the aggregate marks allotted to the whole examination.

A candidate who fails in one paper only of a group, but who obtains .5 in the aggregate of the remaining papers of the group, will be re-examined in that paper only. When that paper is taken on re-examination, a candidate will, to complete his qualification in the group, be required to obtain .5 in that paper. Such a paper must be taken up with any remaining group, paper, or papers, in which the candidate has yet to qualify.

A candidate who fails in more than one paper of a group, or in the aggregate of a group, will be re-examined in the whole of that group.

An examination is held twice a year (commencing on the Tuesday following the last Monday in March and the second Monday in October). Candidates may take all three groups at one examination or may take one or two at a time, as may be found most convenient.

The examinations may be passed at any time before graduation, but a candidate is not eligible for a commission until he has obtained his degree.

Candidates are recommended to take six weeks of their training with the Permanent Forces before commencing to attend lectures, as they will find it a considerable help in understanding the various subjects. This is, however, by no means indispensable, and the whole course of lectures can be taken, if desired, before the candidate is attached to a military unit.

McGILL CONTINGENT CANADIAN OFFICERS' TRAINING CORPS

To provide undergraduates with practical training in military work, a contingent of the Canadian Officers' Training Corps has been organized at McGill.

The contingent is a unit of the Active Militia and is governed by special regulations. It cannot be called out for active service as a unit, but all qualified members, if not attached to any unit, are placed on the Officers' Reserve list of Canada.

Certificates of proficiency are issued to members who qualify. These certificates are of two classes, "A" and "B," "A" certificate being given to those who spend two years with the corps as efficient members and "B" certificate to those who spend three or more years as efficient members.

In order to qualify, its members must join the C.O.T.C. for a minimum period of two sessions, and attend all drills and lectures and pass certain examinations. The time required is about two hours per week per session; the hours being on Wednesday from 5 to 6 p.m. and Friday from 5 to 6 p.m.

The value of the C.O.T.C. certificates of proficiency lies in their being a guarantee of from two to four years' consecutive training of a nature to produce good officers. Should a member of the C.O.T.C. possessing a certificate wish to join any militia corps, this certificate entitles him to rank as an officer without any further training.

The training received in this Corps is of such a nature that all students are recommended to take it. Enlistment is purely voluntary on the part of the students.

THE GRADUATE SCHOOL.

Graduate instruction was for many years offered in the various departments of McGill University without definite organization. The increased demand for such work led the Corporation in 1906 to formally organize and extend the higher teaching work of the University. A Graduate School was, therefore, established, and in it are enrolled all the graduate students in the University who are following advanced courses of study in subjects which in the undergraduate work fall within the scope of the Faculties of Arts and of Applied Science.

The Faculty of the Graduate School consists of the professors of the Faculties of Arts and of Applied Science, but the initiative and administration of the School is placed in the hands of a Committee selected mainly from these Faculties and known as the Committee on Graduate Studies. The Chairman of this Committee is the official head of the Graduate School. The advanced courses of study offered in the Graduate School lead to the degrees of Master of Arts, Master of Science, and Doctor of Philosophy.

Instruction for students of the Graduate School is provided in the following departments of study which at present rank as "Subjects":—

Philosophy, including Psychology.
History.
Economics and Political Science.
Greek Language and Literature (including Grecian History).
Latin Language and Literature (including Roman History).
French Language and Literature.
German Language and Literature.
English Language and Literature.
Semitic Studies.
Archæology.
Comparative Philology.
Education.
Mathematics.
Physics.
Chemistry.
Botany.
Zoology.
Geology and Mineralogy.
Thermodynamics and Theory of Heat Engines.
Theory of Elasticity, Strength of Materials and Theory of Structures.
Hydrodynamics and Hydraulics.
Applied Electricity.
Theory of Machines and Machine Design.
Metallurgy.
Mining.

The requirements for the several degrees in course are as follows:—

Degree of Master of Arts.

1. Candidates must hold the degree of B.A. or B.Sc. (in Arts) from McGill University, or its equivalent.

2. Candidates must have taken

(*a*) One year of resident graduate study at McGill University; or

(*b*) Two or more years of private work; the amount of such work required may be stated to be the equivalent of one year of academic study.

3. One, two or three subjects may be taken.

4. One of these subjects shall be designated as the major subject and special attention shall be devoted to it. It must be a subject which the student has already studied in his undergraduate course, and the work required in it will represent an attainment in knowledge far in advance of that required for the B.A. degree. The minor subject, or subjects, may be selected from those of the undergraduate course of the third or fourth year, which have not already been taken by the candidate. Not more than one-third of the candidate's time for the year shall be devoted to these subjects. The student shall pass an examination in each of the subjects of his course.

In the case of students of first rank honour standing in mathematics and physics, if the major work is to be in physics, exemption may be granted from part of the required attendance on lecture courses, on the recommendation of the Head of the Department in physics and subject to the approval of the Committee on Graduate Studies.

Candidates holding the ordinary B.A. degree must have taken all the ordinary undergraduate courses, or their equivalents in the subject which they select as their major.

5. The student shall also present a thesis on some topic connected with his major subject. The title of his thesis must have been previously submitted to the Committee on

Graduate Studies and the Head of the Department concerned for their approval. The thesis must show evidence of distinct ability in dealing with the subject selected, and must also display good literary style.

6. Graduates possessing a Bachelor's degree, who act as demonstrators or tutors in the University for the entire session, may proceed to the degree of M.A., and, in so doing, may at the discretion of the Department with which they are connected, and the Committee on Graduate Studies, omit a portion of the course of study. They shall, however, be called upon to pass an examination on the course of study which they have followed, and shall in all cases submit the thesis prescribed for that degree. If, however, they desire this year's work to count as one of the three years of study required for the Ph.D. degree, they must make their course of study conform to the Ph.D. requirements.

N.B.—The first year's course of study for the Ph.D. degree will cover the requirements of the M.A. course; but, if such a course of study be followed, a thesis must be submitted and approved before the degree of M.A. is conferred. If, however, the student continues his course of study and takes the degree of Ph.D., the degree of M.A. will be conferred with the degree of Ph.D., in which case no special thesis will be required for the former.

Degree of Master of Science.

1. Candidates must hold the degree of B.A. or B.Sc. from McGill University, or its equivalent.

2. Candidates must have taken

(*a*) One year of resident graduate study at McGill University; or

(*b*) Two or more years of private work; the amount of such work required may be stated to be the equivalent of one year of academic study.

3. The course of study followed by the candidate shall be of an advanced character, being the equivalent of that required for the degree of M.A., and shall lie in the domain of pure

or applied science. It shall be selected from *one* of the last thirteen subjects in the list given above. Geodesy and ore dressing also constitute subjects in the case of this degree. This course of study must have been previously submitted to the Head of the Department and to the Committee on Graduate Studies and have received their approval.

In the case of students of first rank honour standing in mathematics and physics, if the major work is to be in physics, exemption may be granted from part of the required attendance on lecture courses, on the recommendation of the Head of the Department in physics and subject to the approval of the Committee on Graduate Studies.

4. The candidate shall also present a thesis on some subject connected with his course of study. The title of this thesis must have been previously submitted to the Head of the Department and to the Committee on Graduate Studies and have received their approval. This thesis must show evidence of distinct ability in dealing with the subjects selected and must also display good literary style. It may deal with some very special topic, but the courses of study followed by the student must cover a much wider field.

5. Graduates possessing a Bachelor's degree, who act as demonstrators or tutors in the University for at least one entire session, may proceed to the degree of M.Sc., and, on so doing, may, at the discretion of the Committee on Graduate Studies, omit a portion of the course of study usually required. They shall, however, be called upon to pass an examination on the course of study which they have followed, and shall in all cases submit the thesis prescribed for the degree.

Degree of Doctor of Philosophy.

1. The candidate for the degree of Doctor of Philosophy must hold the degree of B.A. or B.Sc. from McGill University, or its equivalent.

2. He must have followed a course of at least three years' resident graduate study.

3. He must select one major subject and one minor subject. The minor subject selected must be related to his chief line of work. This minor subject shall have devoted to it about one-quarter of the instruction given during the entire course.

4. The candidate must satisfy the Committee that he has a reading knowledge of both French and German before he will be permitted to enter upon the course of the second year.

5. The examination on the major subjects shall cover not merely the formal courses of instruction which have been taken, but the candidate must show that he possesses a good general knowledge of the whole science or branch of learning which he has selected as his major subject. A similar general, though less detailed, knowledge shall be required in the case of the minor subject.

6. The candidate must also prepare a thesis which must display original scholarship or show marked ability to conduct research. If the thesis be accepted, two hundred printed copies of it must be deposited with the University Librarian before the candidate will receive his diploma.

The University has decided to exact a very high standard in the case of this degree, and at least three years of study are therefore demanded.

To meet immediate needs, the University has decided to offer the complete three years' course leading to the degree of Doctor of Philosophy in the following subjects taken as majors:

Botany.
French.
Philosophy.
Physics.
Chemistry.
Zoology.
Theory of Elasticity, Strength of Materials and Theory of Structures.
Semitic Studies.

Students desiring to proceed to the degree of Doctor of Philosophy in subjects other than those mentioned above may

communicate with the Chairman of the Committee on Graduate Studies, to whom also application should be made by all students desiring to follow courses of study in the Graduate School.

Owing to the fact that in future all theses submitted by successful candidates for higher degrees will be bound and placed in the Redpath Library, candidates for such degrees are advised that the Committee on Graduate Studies will henceforth require all theses to be prepared in a uniform manner and in accordance with the following specifications:—

1st.—The paper is to be of uniform size, 8¼ x 10 inches, and of substantial quality.

2nd.—The left-hand margin is to have a uniform width of 1½ inches.

3rd.—All theses should be type-written, if possible.

4th.—No binding is to be employed, but the loose sheets will be placed in a manilla envelope in the order of their pagination.

All theses for 1913-14 *must be in the hands of the Chairman of the Committee on Graduate Studies on or before April* 17*th,* 1914. *No thesis received after this date will be accepted.*

THE UNIVERSITY LIBRARY.

C. H. GOULD, B.A., Librarian.

The University Library is under the general management of a Committee of Corporation, consisting of the Principal, Chairman; the Librarian, Secretary; two members of the Board of Governors; one Representative Fellow, appointed by Corporation; two representatives of the Faculty of Arts, elected by the Faculty; one representative of each of the Faculties of Applied Science, Law and Medicine, elected by their respective Faculties; and four other members appointed by Corporation.

The several libraries of the University now contain about 140,000 volumes, over 24,000 pamphlets, considerable collections of maps and photographs, and a number of the rarer and more costly monographs and serials which are indispensable for purposes of research; there being now on the shelves over 300 complete files of periodicals, and publications of various literary and scientific societies.

Among the special collections possessed by the Library may be mentioned the Mendelssohn Choir Memorial Collection of Works of Music, the T. D. King Collection of Shakespeariana, the Redpath Historical Collection, and the Collection of Canadiana. The nucleus of the latter is formed by the choice library of the late Mr. Frederick Griffin, which he bequeathed to the University about forty years ago. It has been growing ever since, and includes, at the present time, besides numerous manuscripts, an interesting collection of Canadian portraits and autographs.

The Redpath Historical Collection was begun by the late Mr. Peter Redpath soon after he became a Governor of the University. It received substantial yearly additions from him up to the year of his death, after which it was steadily

augmented during the remainder of her life, by his widow. It is now large and valuable, and affords excellent opportunities for the study of history. Its most striking feature —a series of political, religious, and social tracts, for which the first selections were made by the late Professor Henry Morley—was greatly enriched by the late Mrs. Redpath, and at present comprises about 10,000 brochures, dating from 1600 A.D. to the end of the nineteenth century.

The Medical Library, directly controlled by the Faculty of Medicine, is the largest of the departmental libraries, and is one of the most complete collections of its kind in the Dominion.

Current periodicals, with Transactions and other Society publications to the number of about 400 in the aggregate, are regularly received by the Library.

During the autumn of 1900, members of the family of the late Mr. Hugh McLennan generously enabled the Library Committee to establish a system of travelling libraries, for the maintenance and operation of which they have since provided. The libraries are sent on application, and on payment of a nominal fee of $3.00, to any point in Canada. Regulations and full particulars may be obtained from the Librarian of the University.

Although the Library is maintained primarily for members of the University, the Corporation has provided for the admission, upon certain conditions, of such persons as may be approved by the Library Committee. It is the desire of the Committee to make the Library as useful to the entire community as is consistent with the safety of the books and the general interests of the University.

LIBRARY SUMMER SCHOOL.

The summer school for training librarians will open towards the close of June, 1913, and will continue for one month.

Its object is, firstly, to aid librarians of small libraries and library assistants to study those technical subjects, without the knowledge of which no librarian can make even the

smallest library as influential and as useful as it ought to be; secondly, to give the students a broader view of what the library should stand for in the community.

The principal subjects of study will be (a) *Classification*—based on Cutter's Expansive Classification, with practice work on selected books; (b) *Cataloguing*—the preparation of a dictionary catalogue on cards, including the various forms of author-entry, title- and subject-entry, analytics and references; (c) *Reference Work*—discussion of books used in reference work, with problems; (d) *Principles of book selection,* with problems. Other topics including binding, library buildings, travelling libraries, and work with schools and children will receive attention. Anyone who holds a library position or appointment will be admitted without examination.

Fee for the course, $5.00. Supplies and stationery, about $3.00.

EXTRACTS FROM THE LIBRARY REGULATIONS.

1. The Library is closed on Sundays, and on nine other days during the year. These days, and any variation from the regular hours given below, are noted specifically in the Calendar under the day in question.

The hours of opening are:—

(a) During the session, from 9 a.m. till 6.30 p.m. and from 7.30 till 10.30 p.m. On Saturdays, from 9 a.m. till 5 p.m.

(b) During vacation from 9 a.m. till 5 p.m. On Saturdays, from 9 a.m. till 1 p.m.

2. Students in the Faculties of Arts, Law, and Applied Science are entitled to read in the Library, and may borrow books (subject to the regulations) to the number of three volumes at one time.

3. Students in the Faculty of Medicine, who have paid the Library fee to the Bursar, may read in the Library, and on depositing the sum of $5 with the Bursar, may borrow books on the same conditions as students in other Faculties.

4. Graduates in any of the Faculties, on making a deposit of $5, are entitled to the use of the Library, subject to the same rules and conditions as students in Arts, Law, or Applied Science.

5. Books may be taken from the Library only after they have been charged at the Delivery Desk; borrowers who cannot attend personally must sign and date an order, giving the titles of the books desired.

6. Books shelved in the Reading-rooms or Seminary-rooms must not be taken from the rooms to which they have been assigned; and, after they have been used, they must be returned promptly by readers to their proper places upon the shelves.

7. Before leaving the Library, readers must return to the attendant at the Delivery Desk books which they have drawn from the Stack for use in the Reading-room.

8. All persons using books remain responsible for them so long as the books are charged to them, and borrowers returning books must see that their receipt is properly cancelled.

9. Writing or making any mark upon any book belonging to the Library is unconditionally forbidden. Any person found guilty of wilfully damaging any book in any way shall be excluded from the Library, and shall be debarred from the use thereof for such time as the Library Committee may determine.

10. Damage to or loss of books, maps, or plates, and injury of Library fixtures, must be made good to the satisfaction of the Librarian and of the Library Committee.

Damage, loss or injury, when the responsibility cannot be traced, will be made good out of the caution money deposited by the students with the Bursar.

11. Should any borrower fail to return a book upon the date when its return is due, he may be notified by postal card, and be requested to return the book. If the loan is not renewed, or the book returned, after a further delay of at most three days, it may be sent for by special messenger, at the borrower's expense.

12. Before the close of the session, students in their final year must return uninjured, or replace to the satisfaction of the Librarian, all books which they have borrowed.

13. Silence must be strictly observed in the Library.

14. Infringement of any of the rules of the Library will subject the offender to a suspension of his privileges, or to such other penalty as the nature of the case may require.

THE ROYAL VICTORIA COLLEGE.

The institution of the Royal Victoria College, in September, 1899, was a direct continuation of the work begun in 1883, during the Principalship of the late Sir William Dawson, when Lord Strathcona and Mount Royal placed a sum at the disposal of the University of McGill for the endowment of a College and classes for women. For many years previously it had been hoped by those interested in the education of women in Montreal that the University would extend its benefits to women, but the means necessary for carrying out such an aim had not been available. The classes were organized in 1884 as a special course in the Faculty of Arts, held at McGill College, separate in the main from those for men, but under identical conditions. In some of the work of the third and fourth years, and in the honour courses, the classes were held jointly.

The ultimate aim of Lord Strathcona had been the foundation of a place of residence, and, with this object, he announced his intention of building and endowing the Royal Victoria College. By the opening of this Institution the opportunity of residence and college life is given to women students of McGill University, working in accordance with the system previously organized in the special course in Arts, but under greatly improved conditions. A share in the advantages of college life is offered also to the non-resident women-students of the University, who are henceforth also students of the Royal Victoria College. Additional elements have been added in the organization of a Musical Department, now superseded by the McGill Conservatorium of Music, and in the institution of resident women tutors. These additions are in accordance with the general aim of the College; viz., the higher education of women, and mainly to qualify them to take degrees in Arts (including pure science), and to provide them with instruction in those branches of a

liberal education necessary thereto and in such other subjects as may from time to time be determined.

The College being a constituent college of McGill University, its students, whether graduate students, undergraduates, conditioned undergraduates, or partial students, follow the courses in Arts and pure science offered by the University.

Lectures are given by the professors and lecturers of the University, either in the College or in the University buildings, and students attend the University laboratories for practical instruction. In addition to the instruction given in lectures and laboratory practice, the students of the Royal Victoria College are assisted in their studies by the resident tutors.

THE COLLEGE BUILDING.

The College is situated on Sherbrooke Street, at the head of Union Avenue, in close proximity to the University buildings and to the slopes of Mount Royal. The building is fireproof, and much thought and artistic care have been given to the furnishing and decoration.

On the ground floor are the offices of the Administration, including the rooms of the Warden and Secretary, the professors' common room, lecture rooms, students' common room and a spacious dining hall. On the first floor are other lecture rooms, the library, reading room, a handsome assembly hall, and a few rooms for resident students. The second and third floors are occupied by the rooms of the resident students and tutors. These are of varying size and plan. Each student has a separate study bedroom. The entire use of a sitting-room can be obtained, and arrangements may be made for a sitting-room to be shared by the occupants of the two or three bedrooms immediately adjoining. The rooms are completely furnished, and no article of furniture need be brought by the students.

In addition to the lawn at the back of the College, the students are entitled to use, subject to regulations, the grounds of McGill University, with its tennis-courts, skating-rink, etc.

A nucleus of a College library has been formed with a set of books, comprising the chief stated books and others referred to in connection with the University curricula, the modern language course being especially well represented. There are also works of general literature. The library is a reading-room, and the books are not taken away. The students have access also to the University lending library.

Resident students of music have the use of pianos in two practising-rooms and, at certain hours, in other parts of the building.

A large gymnasium is provided, fully equipped in accordance with modern requirements. In connection with the Gymnasium there are bath-rooms and dressing-rooms.

Students of the Royal Victoria College, as students of McGill University, are entitled to the use of the University Library, containing about 135,000 volumes, and the Peter Redpath Museum, containing large collections in mineralogy, palæontology, zoology, botany, archæology, and ethnology, and to work in the physical, chemical, zoological, botanical and other laboratories. (For particulars of laboratories, etc., see pp. 376 to 387.

BOARD AND RESIDENCE.

Residence in the College building is open to graduate students, undergraduates, conditioned undergraduates, or partial students, but the last are not received in residence unless they take courses of study approved by the Faculty of the College. The charge for board and residence, in addition to the sessional fees for tuition (see pp. 74 to 76) is $340. An additional charge, varying from $25 to $60, is made for the use of a private sitting-room shared by two students or for the sole use of a private sitting-room. These charges cover the University session from about 28th September to about 14th May, and the summer classes, extending to June 12th, and other periods, if necessary, for examinations. Students remaining in residence during the Christmas vacation will be required to pay $1.00 a day for board and residence during that period. A deduction of $50 is made in the case

of students who go out of residence at the end of the University session.

The health of the resident students is under the charge of a competent physician practising in Montreal, who may be consulted free of charge. Every student applying for admission to residence is required to forward a medical certificate on a form provided by the College.

Applications for admission or further particulars should be addressed to the Warden, Royal Victoria College, Montreal.

PHYSICAL EDUCATION.

The Department is in charge of the Medical Director of Physical Education of McGill, and a graduate of a Physical Education College.

Every student on entering the University is required to pass a physical examination (see regulation, p. 41).

The physical education offered to undergraduate students includes educational, remedial and recreative gymnastics.

The educational gymnastics are based on anatomical and physiological laws; the exercises aim at producing the highest degree of health in each individual, and thus contribute to mental as well as to physical efficiency. The course of exercises, which is progressive throughout each session, encourages the harmonious development of the nervous and muscular system, and provides a remedy for incorrect habits of sitting, standing and walking. Special attention is given to the development of the chest, since a good lung capacity is the foundation of a really healthy constitution. All students are examined by the Medical and Physical Directors before taking part in any of the exercises organized by the Department, and a remedial gymnastic course is prescribed for undergraduate students with spinal curvature, or who are physically unfit for ordinary class work.

Recreative gymnastics in the shape of basket ball, tennis, ice hockey, fancy skating and athletic sports are also organized by the Royal Victoria College Athletic Association, under the supervision of the Department.

Undergraduates of the first and second years are required to attend two educational gymnastic classes per week and undergraduates of the third year one per week.* Undergraduates of the fourth year wishing to enter educational gymnastic classes are expected to attend regularly. Undergraduate students entering the Royal Victoria College in their third or fourth year are required to attend educational gymnastic classes twice a week for one session, unless they are excused for reasons deemed sufficient by the Department. Beginning with the first year class of 1913-14, work in the Physical Education Department, amounting to 140 hours during the four years' course, will be required of all undergraduate students, in place of the 144 hours now required during the first three years. The periods will be used for instruction in personal hygiene and for educational remedial and recreative gymnastics, according to the physical requirements of the individual. No student will be asked to do work unsuited to her physique, and students debarred from exercise of any kind will be dealt with separately and carefully advised. Reports of attendance in Physical Education will be regularly sent to the Faculty.

Partial students in residence are also required to attend educational gymnastic classes. Educational and recreative gymnastics are open to all partial students on payment of special fees.

The Physical Director arranges all regulations regarding necessary attendance and the substituting of recreative gymnastics for educational.

For regulations concerning the Strathcona Prizes offered in this Department, see p. 342.

For theoretical and practical courses of instruction offered to undergraduates and for courses for the training of teachers in Physical Education, see p. 342.

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* In all cases of absence the student is required to report to the Physical Director. The ordinary interpretation of the one-eighth rule concerning absences does not apply in this Department. Every student is required to wear the costume recommended by the Department.

EXHIBITIONS AND SCHOLARSHIPS.

For a statement of the exhibitions and scholarships open to women students of the University, see pp. — to —.

In addition to these, and further to encourage residence within the College walls of students who might otherwise arrange to board in the city, the Warden and Staff are empowered to make nominations in any of the four College years to not more than three additional exhibitions of the value of $100 each.

MUSIC.

Instruction in Music is offered at the McGill Conservatorium of Music,—Director, Dr. H. C. Perrin; Miss Clara Lichtenstein, Vice-Director. The subjects of instruction carried on in the Conservatorium are: pianoforte, singing, organ, violin, violoncello, and all orchestral instruments; harmony, counterpoint, canon and fugue, composition, form, analysis, history of music, theory, elements of music, orchestral class, ensemble playing, piano-accompaniment, part singing, choir singing, sight singing, operatic class, English, French, German, Italian, elocution. Students may prepare for the degree examinations in music of the University, or for other examinations recommended by the Conservatorium.

For information regarding courses in music leading to degrees, see page 337, and also the separate syllabus issued by the Conservatorium of Music.

Students taking undergraduate courses in music are eligible for residence in the College. Students taking other courses in music may also be eligible under certain conditions if there are vacancies in residence. For charges for residence, see p. 362.

MACDONALD COLLEGE.

GENERAL STATEMENT.

Macdonald College, which is incorporated with McGill University, was founded, erected, equipped and endowed by Sir William C. Macdonald for the following, among other purposes:—

(1) For the advancement of education; for the carrying on of research work and investigation and the dissemination of knowledge; all with particular regard to the interests and needs of the population in rural districts.

(2) To provide suitable and effective training for teachers, and especially for those whose work will directly affect the education in schools in rural districts.

The College occupies a beautiful site, overlooking the Ottawa River at Ste. Anne de Bellevue, twenty miles west of Montreal. The main lines of the Grand Trunk and the Canadian Pacific railways pass through the property, and the stations of both railways are within its boundaries.

The College property comprises 561 acres, and has been arranged into four main areas, viz.: (1) the Campus, with lawn, school garden, and recreation fields for men and women; (2) Experimental grounds, with plots for illustration and research in grains, grasses, and other farm crops; (3) the Small Cultures Farm for horticulture and poultry keeping; and (4) the Live Stock Farm extending to 387 acres.

THE GENERAL ORGANIZATION.

The College is divided into three schools, and a student is enrolled in that one in which the major portion of his work is taken:

(1) **The School of Agriculture**, which aims to provide a thorough theoretical and practical training in the several branches of agriculture.

(2) **The School for Teachers**, where will be offered a comprehensive and thoroughly practical training in the art and science of teaching.

(3) **The School of Household Science**, in which young women receive training which will make for the improvement and greater enjoyment of home life.

ENTRANCE REQUIREMENTS.

School of Agriculture.

All candidates for admission:—

1. Must have entered upon their eighteenth year;

2. Must produce satisfactory evidence as to moral character, also medical certificate of physical health, including successful vaccination within the four years preceding date of entrance; and

3. Must produce evidence of having worked for a season (seed time to harvest) on a farm, affording a practical knowledge of ordinary farm operations.

All candidates for the One and Two-Year Courses will be required to read and write the English language acceptably, to be proficient in the use of elementary mathematics, and to be acquainted with history and geography, especially of Canada.

A student who applies for admission to the courses leading to a degree will be required:—

(a) To pass, before entrance, an examination in English composition, English grammar, history and arithmetic.

(b) Before being allowed to proceed with the work of the third year, to have obtained 60 per cent. of the marks in English and 50 per cent. in general proficiency in the exam-

ination of the work of the Two-Year Course, and to be granted the permission of the Faculty;

or

(c) To have passed an examination* in the following subjects, up to the requirements for entrance to the other Faculties of McGill University—(1) English literature, (2) Latin, French or German, (3) algebra, part I, (4) geometry, part I, (5) any two of the following: botany, chemistry, physics, zoology; to have passed an examination in the work of the Two-Year Course; and to have obtained the permission of the Faculty.

School for Teachers.

Teachers to be trained for the schools under the control of the Protestant Committee of the Council of Public Instruction for the Province of Quebec will be admitted under conditions prescribed by that body, particulars concerning which are given in detail in the Announcement of Macdonald College.

Other teachers, and others who wish to become teachers elsewhere, will be admitted for courses under regulations of the Macdonald College Committee.

Such candidates for admission:—

1. Must be 18 years of age;

2. Must be recommended by the Department of Education or a School Inspector of the Province in which they reside;

3. Must produce satisfactory evidence as to moral character; also medical certificate of health, including successful vaccination within the four years preceding date of entrance.

School of Household Science.

All candidates for admission:—

1. Must have entered upon their eighteenth year;

2. Must produce satisfactory evidence as to moral character; also medical certificate of health, including successful vaccination within the four years preceding date of entrance.

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* Certificates of having passed an equivalent examination will be accepted.

All candidates for the One and Two-Year Courses will be required to read and write the English language acceptably, to be proficient in the use of elementary mathematics, and to be acquainted with history and geography, especially of Canada.

LIVING EXPENSES AND FEES.

The charges for board and lodging are as follows:—

For each occupant of a double room with single beds, per week $4.00

The above charges must be paid strictly in advance, and may be for the whole term, or for four weeks at a time.

Caution Money.—Every student must also, at the time of entrance, make a cash deposit of $5.00 with the Bursar of the College, to cover fines, breakages, etc.; and as soon as any student's deposit is exhausted he or she will be required forthwith to make an additional deposit of the same amount.

FEES.

In the School for Teachers tuition is free to residents of Quebec. Other residents of Canada are charged $75.00 and students from outside of Canada $100.00.

In the School of Agriculture tuition is free to students belonging to the farming community of the Province of Quebec in the first two years. For other residents of Canada the fee is $50.00, and for students outside of Canada $100.00.

In the School of Household Science tuition is free for students belonging to the farming community of the Province of Quebec in the one and two year courses; for other residents of Canada the fee is $75.00 and for students outside of Canada $100.00 per session.

PAYMENTS AT ENTRANCE.

	Tuition, *per session*	Laboratory Fee	Caution Money Deposit	4 Weeks Board in Advance*	Doctor's Fee	Total
SCHOOL OF AGRICULTURE:—						
First and Second Years:						
Students belonging to the farming community of the Province of Quebec...	Free	$ 5.00	$ 5.00	$ 16.00	$ 3.00	$ 29.00
Other residents of Canada.....	$ 50.00	5.00	5.00	16.00	3.00	79.00
Students from outside Canada.....	100.00	5 00	5.00	16.00	3.00	129.00
Third and Fourth Years:						
Students belonging to the farming community of the Province of Quebec...	50.00	15.00	5.00	16.00	3.00	89.00
Other residents of Canada.....	50.00	15.00	5.00	16.00	3.00	89.00
Students from outside Canada.....	100.00	15.00	5.00	16.00	3.00	139.00
SCHOOL FOR TEACHERS:—						
Residents of Quebec.....	Free	5.00	5.00	16.00	3.00	29.00
Other residents of Canada.....	75.00	5.00	5.00	16.00	3.00	104.00
Students from outside Canada.....	100.00	5.00	5.00	16.00	3.00	129.00
SCHOOL OF HOUSEHOLD SCIENCE:—						
Homemaker and Housekeeper Courses:						
Students belonging to the farming community of the Province of Quebec...	Free	10.00	5.00	16.00	3.00	34.00
Other residents of Canada.....	75.00	10.00	5.00	16.00	3.00	109.00
Students from outside Canada.....	100.00	10.00	5.00	16.00	3.00	134.00
Short Courses (per course):—						
Students belonging to the farming community of the Province of Quebec...	Free	5.00	5.00	16.00	2.00	28.00
Other residents of Canada.....	25.00	5.00	5.00	16.00	2.00	53.00
Students from outside Canada.....	25.00	5.00	5.00	16.00	2.00	53.00

* Occupants of single rooms are charged 50 cents per week extra. Students in Agriculture from the Province of Quebec receive a grant from the Provincial Government of $7.00 per month of attendance on account of board. See next page.

THE B.S.A. DEGREE.

Students who shall have completed the regular course of study in Agriculture, as laid down in the Announcement of the College, shall have passed the prescribed examinations for graduation, and shall have performed such exercises as may be prescribed to that end—the whole to the satisfaction of the Faculty of Agriculture—shall be entitled to the degree of Bachelor of Science in Agriculture, and the designation of the degree, when abbreviated, shall be the letters B.S.A.

COLLEGE ANNOUNCEMENT.

Full details as to the courses, etc., will be found in the Announcement of Macdonald College, which will be sent on application to the Principal, Macdonald College Post Office, Que.

PROVINCIAL GOVERNMENT GRANT TO STUDENTS FROM THE PROVINCE OF QUEBEC.

(1) *School of Agriculture.*

The Department of Agriculture of the Province of Quebec grants to each student who belongs to the Province of Quebec $7.00 per month of attendance employed in studying according to the time tables in the School of Agriculture, Macdonald College. This amount will be placed to the credit of such students by the College Bursar and will be applied on account of board and lodging.

(2) *School of Household Science.*

The Provincial Government grants fifty bursaries of $20.00 each to Quebec students in the Junior and Senior years of the Household Science School.

THE UNIVERSITY BUILDINGS.

The Centre Building.—This is the oldest building of the group. It contains the lecture rooms of the Faculties of Arts and Law, as well as the botanical and zoological laboratories and the offices of the administration.

The Conservatorium of Music is situated at the corner of University and Sherbrooke Streets, adjoining the University grounds. On the ground floor are the offices of the Director and of the Secretary, the library and a concert hall where recitals by the staff and students are given during the session and where orchestral and choral practices are held (the more important concerts take place in the large assembly hall of the Royal Victoria College). The second and third floors contain a number of studios, where lessons are given by the various members of the staff, as well as a room for lectures in theory and history of music, sight-singing, etc. In the basement are several practice rooms.

The New Medical Building.—This building, erected at a cost of over $600,000, stands at the corner of Pine Avenue and University Street.

Of the central part of this building the greater portion is set aside for the accommodation of the library, the whole of the front of the second and third floors and a portion of the ground floor being used. On the third floor is a large students' reading room, 76 x 24 feet, exceptionally well lighted and capable of accommodating 100 readers. On this floor also is the staff journal room and the private offices of the librarian. The second floor is occupied by the stack room, with accommodation for sixty thousand volumes, also by individual research and reading rooms. A portion of the ground floor is set aside for storage.

Besides the library, the central portion of the building contains also three lecture rooms, the private museum and offices of the professor of anatomy and the administration office, research and preparation rooms of the museum staff.

To the rear of the central building is the museum, probably the most complete structure of its kind in connection with a medical school on this continent. It is built in the form of a cross, three storeys high, splendidly lighted by ample window space on three sides and by a large central light well. Each floor is furnished with free stacks and wall cases made of steel and plate glass, thoroughly dust-proof. The anatomical collections are placed on the third floor, while the first and second floors are devoted to pathology. In both the anatomical and pathological sections of the museum the specimens have been prepared and classified with a view to their being made use of in the teaching of these important subjects.

The east wing gives accommodation for the departments of anatomy, pathology and bacteriology, the dental department, the faculty rooms and administration offices, the mortuary and preparation room for dissecting material, as well as ample space for students' lockers and lavatories, and a large, well-lighted students' reading and smoking room.

On the ground floor of this wing will be found the mortuary, in which there is provision for the storage of 80 subjects, and leading from this the preparation room. On this floor also is the large locker room, containing 400 steel lockers, the students' lavatory and the students' reading and smoking room, this latter being provided with newspapers and magazines and being under the control of the students themselves.

On the first floor is the Faculty room and a series of rooms for administrative work. The northern half of this floor is occupied by the dental department, comprising offices, lecture rooms and modern, well-equipped laboratories.

The second floor is wholly occupied by the department of pathology and bacteriology. In the southern half is the professor's private laboratory and office, four research and preparation rooms, a small demonstration theatre and an assistant's room. The northern half is occupied by the students' laboratory, a room 76 x 40 feet, splendidly lighted and equipped with all the necessary apparatus for modern laboratory instruction.

The third floor is taken up wholly by the department of anatomy and contains besides private offices and research rooms for the professor and staff, a large dissecting room, 88 x 40 feet, excellently lighted and fully equipped. There is also on this floor a large lavatory and students' locker room.

Between the second and third floors is a mezzanine floor which is devoted to the department of parasitology. Here,, besides the private offices and research rooms of the professor, there are four fully-equipped laboratories for advanced work.

The west wing contains a large assembly hall. The remaining space is occupied by the departments of pharmacology and hygiene.

The Old Medical Building.—The Laboratory or North Wing of the Old Medical Building contains the laboratories for medical chemistry, physiology, histology and junior zoology.

The ground floor is set apart for medical chemistry.

On the eastern side of the hall is the students' laboratory, 45 by 80 feet, which is well equipped for 190 students.

A research laboratory, with eight working places and adjoining professor's room, private balance room, etc., connect with the large laboratory.

On the western side of the hall is the lecture room, connected with two preparation rooms, store-rooms and a small bio-chemical museum.

The students' balance room and a dark room for polariscopic and photographic work are opposite the main entrance to the chemical laboratory.

Laboratory courses in general chemistry of the first year, organic and biological of the second year, and the physiological and clinical chemistry of the third year are given in the large laboratory. All classes are taken in sections.

The mezzanine floor contains the lecture room for physiology and a series of laboratories for advanced work in practical physiology.

The top floor has on the east side the general laboratory for biology and histology, 80 by 42 feet, connected with which are the research and private laboratories, dark room for micro-projections, etc.

On the west side are the large laboratory for physiology, the professors' rooms, preparation rooms and research laboratories.

The Macdonald Engineering Building.—This building is designed to provide accommodation for six hundred students. The Departments of Civil Engineering, Architecture and Transportation are permanently provided for, while the Department of Electrical and Mechanical Engineering are given temporary accommodation until such time as independent buildings can be provided for the growing numbers in these departments. The ground floor is given up to the Civil Engineering, Geodetic, Electrical and Mechanical Engineering Laboratories and is for the most part 23 feet in height. Mechanical and Electrical Engineering Laboratories and the Workshops also occupy the three lower floors of the Workman Building. The centre portion of the second floor is used for purposes of administration (faculty room, offices, library, etc.). The front parts of the second and third floors are occupied by eight class rooms which contain 470 sittings, while the upper floors, both of the Engineering Building and the Workman Building, are devoted to drafting rooms, containing over 500 tables. The building throughout is of the most approved fireproof construction, not only in the matter of materials, but in arrangement as well, the several floors being divided by fire walls and fire doors into separate sections. It has been erected at a cost of about half a million dollars.

The Macdonald Chemistry and Mining Building.—In addition to the large lecture theatre, which seats about 250 students, there are here four lecture rooms for smaller classes, and a number of offices. There are also three large general chemical laboratories (each with a floor space of about 2,400 square feet and accommodation for 200 students at a time), large laboratories for assaying, ore dressing and metallurgy, with a very complete equipment, and a number of smaller rooms and laboratories for special purposes, including research work. The reference library contains about 1,400 volumes.

The Macdonald Physics Building.—This building is five storeys in height, each floor having an area of 8,000 square feet. Besides a lecture theatre and its apparatus rooms, the building includes an elementary laboratory nearly 60 feet square, large special laboratories, a range of rooms for optical work and photography, separate rooms for private work, and two large laboratories arranged for research, provided with solid piers and the usual standard instruments. There are also a lecture room for mathematical physics, a special physical library and convenient workshops. The equipment of the Physics Building is exceedingly valuable and complete.

The Redpath Museum.—The Museum occupies a commanding position at the upper end of the campus, and besides its central hall and other rooms devoted to the collections, it contains a large lecture theatre, class rooms and work rooms. The collections in botany, palæontology, geology and zoology are very fully and admirably arranged for teaching purposes.

The University Library.—This building is a fine example of the Romanesque style of architecture. The general reading room is 110 feet long, 44 wide and 34 high, and will seat 150 readers. The book stack, four and five storeys in height, has a working capacity of 250,000 volumes. For other information regarding the Library, see page 356.

The Observatory is well equipped for instruction in the use of meteorological instruments and in astronomical work.

The Power Station.—The new Power Station supplies heat to the following buildings: New Medical Building, Old Medical Building, Engineering and Workman Buildings, Chemistry and Mining Building, and the Physics Building. It also furnishes current for light and power to these buildings and to the Arts Building, the Royal Victoria College, the Union and Strathcona Hall.

The equipment of the station includes boilers of 1,000 H.P. nominal capacity, provision being made for future extension, and engines and generators of 600 kilowatt capacity. The coal bunkers hold 500 tons.

The heating distribution is partly by tunnel and partly by underground conduit, the farthest building served being at a distance of 700 feet from the station. Electric cables are placed underground in vitrified clay conduits.

The Royal Victoria College.—This is a residental college for the women students of McGill University. It is situated on Sherbrooke Street in close proximity to the University buildings and laboratories. On the ground floor are the offices of the administration; lecture rooms, students' common room, and a spacious dining hall. A gymnasium is fitted up in the basement. On the first floor are other lecture rooms, the library, reading room and a handsome assembly hall. The second and third floors are given up entirely to rooms for resident students. These rooms are handsomely furnished, as indeed is the whole building. The rates for board and lodging are very reasonable. Full information on all points can be obtained from the Warden. See also page 360.

The McGill Union stands at the corner of Sherbrooke and Victoria Streets, within two minutes' walk of the College gates. The building measures 93 feet by 71 feet and consists of three storeys and a basement. On the main floor are the dining and luncheon rooms; on the second floor, billiard rooms, a news hall, a reading room and library, a study and a lounging gallery (88 ft. by 21 ft.). The large hall is situated in the top storey. It measures 88 ft. by 45 ft. and has a seating capacity of 400. There are also smaller rooms for society meetings, etc. In the basement are baths, locker rooms and an exercise room (24 ft. by 38 ft.). The Union is the social centre of the University, the common meeting ground for the students of all Faculties. It is intended to promote a broad and true university spirit.

Strathcona Hall is the home of the Young Men's Christian Association of the University. The building is 55 feet by 110 feet, and is five storeys in height. The three upper storeys are arranged to afford residential accommodation for about sixty students. On the ground floor are the Secretary's office, sitting rooms, cloak rooms and a hall capable of seating 350 persons. The second floor contains a large reading room, a large game room, and five small rooms for the use of clubs and socieites.

LABORATORIES, MUSEUMS AND WORK-SHOPS.

I. LABORATORIES.

BOTANICAL LABORATORIES.

The Botanical Laboratories occupy a large room on the ground floor of the West Wing and the upper floor of the central part of the Arts Building. The laboratories for morphology afford accommodation for thirty-five students. Each table is provided with a complete outfit of instruments and reagents. In addition, the laboratories are supplied with polariscopes, camera lucides, incubators, sterilizers, microtomes and other apparatus needed for advanced work. There is a good supply of lantern slides and of sets of microscopic preparations for demonstration purposes.

The physiological laboratory, on the ground floor, is provided with sufficient apparatus to permit of ten students working in it at the same time.

A library attached to the department includes not only reference books, but 3,000 pamphlets and the leading botanical periodicals. The Botanical Room of the Peter Redpath Museum contains an herbarium of about 50,000 species of plants, a collection of woods and other material illustrative of economic botany.

Algæ are cultivated in aquaria; other living material is grown in the laboratories or obtained from local horticulturists, and a large supply of preserved material is maintained.

CEMENT LABORATORY.

The equipment of the laboratory renders it possible to carry out complete tests of the strength and properties of cements, mortars, concretes, concrete beams, etc., and includes:—

(*a*) Three one-ton tensile testing machines, representing the best English and American practice; (*b*) One 50-ton hydraulic compressive testing machine; (*c*) Volumenometers for determining specific gravity and for determining the carbonic acid in the raw material; (*d*) Faija steaming apparatus for blowing tests; (*e*) Mechanical hand and power mixers; (*f*) Apparatus for determining standard consistency; (*g*) Vicat's and Gilmore's needles for determining set; (*h*) Weighing hopper, spring and other balances; (*i*) Gun metal moulds for tension, compression and transverse test pieces; (*j*) Sieves of 20, 30, 40, 50, 60, 70, 80, 100, 120, and 180 meshes per lineal inch for determining the fineness; (*k*) A Bœhme hammer, with all accessories.

The laboratory is also fitted with copper-lined cisterns, in which the briquettes may be submerged for any required time, and with capacious slated operating tables, bins and tin boxes for keeping the cement dry for any period.

A large amount of work is done each year by the third-year students, in investigating the specific gravity, fineness, setting properties, constancy of volume, and tensile, compressive and transverse strengths of cement, both neat and with sand.

CHEMICAL LABORATORIES.

(In the Chemistry and Mining Building.)

The three principal laboratories have each a floor-space of about 2,400 square feet, and together have accommodation for nearly two hundred students working at a time. They are lighted on three sides, and have ample hood space. One is intended for beginners, and the other for more advanced work, more particularly in qualitative and quantitative analysis. In connection with each of the main laboratories is a balance-room, equipped with balances by several of the best makers.

Physical Chemistry is provided for in a special laboratory, nearly 30 by 40 feet, lighted from the north, and supplied with electricity, steam, vacuum pumps, etc. The equipment of this department consists of the apparatus necessary for the determination of the specific gravities of solutions, of the depression of freezing point, of the rise of boiling point, and of densities of gases and vapours. There are constant-temperature baths for accurate measurement of solubilities, Kohlrausch's apparatus for determining the electrical conductivity of solutions, and the apparatus necessary for measuring the electromotive forces generated between metals and their solutions, and in voltaic cells generally. There are also calorimeters for measuring the heat effects produced in chemical reactions. On the same floor there is an optical room, devoted more particularly to crystallographic work and furnished with gonimeters, polarising microscopes; axial-angle apparatus, refractometers, etc. Other forms of apparatus will be added as required for research work.

Immediately adjoining the laboratory of physical chemistry is the photographic department, supplied with two dark rooms, arranged on the maze system, and provided with the necessary appliances for all ordinary photographic work, including an enlarging camera and apparatus for micro-photography.

The laboratory for gas analysis has a northern exposure, and is fitted with a large tank to contain water at the temperature of the room, for use in obtaining a constant temperature in the measurement of gases. The tables are arranged for work with mercury, and the laboratory is supplied with the apparatus of Hempel, Dittmar, Orsat, Elliot and others. It contains also Fleuss. Boltwood, and Töpler pumps for producing high vacua.

The laboratory for electrolytic analysis is supplied with accumulators, thermopile, platinum electrodes, rheostats, ammeters, voltmeters, etc.

Another room has lately been equipped with electric furnaces and other appliances for electro-chemical work.

The organic department comprises a laboratory for preparations and research, a combustion room for analysis, a dark room for polariscope and saccharimeter work, and a lecture room. The laboratory is fitted with all the necessary apparatus for organic research—special hoods for work with poisonous gases, regulating ovens for digesting and drying at various temperatures, filter presses for the extraction of raw materials, and various forms of apparatus for distillation in vacuo. The dark room is equipped with polariscopes and saccharimeters for sugar work. There is a large supply of the necessary organic chemicals, which are supplied free of charge to students engaged in routine or research work in this department.

The laboratory for determinative mineralogy accommodates 28 students at one time, and is supplied with abundant materials for practical work. It adjoins the lecture-room in which the lectures in advanced mineralogy are delivered. The mineralogical department is also provided with suitable machinery, run by electricity, for the cutting and polishing of minerals and rocks.

ELECTRICAL LABORATORIES.

The experimental equipment of the electrical department is contained in the fourth year, third year, standardizing, high voltage and oscillograph laboratories. Power is supplied to these laboratories from the 220-volt, 3-wire, D.C. generators in the central power house. The voltage is maintained approximately constant on the two sides of the system by a balancer set located in the fourth year laboratory.

The Fourth Year Laboratory is equipped primarily for the study of alternating current phenomena and is equipped with: Motor-driven alternators of various types, giving a range of frequency of from 25 to 250 cycles per sec.; single and polyphase induction motors of the squirrel cage and wound rotor types; single phase series and repulsion motors; constant voltage and constant current transformers; mercury arc rectifier; rotary converters; potential regulators; meters for the measurement of current, voltage, power, frequency, power factor, and wave form; rheostats, circuit breakers, condensers, reactance coils, synchroscopes and other auxiliary apparatus; an electric travelling crane spans the laboratory and gives facilities for the rearrangement of the machines.

The Third Year Laboratory is used by the third year electrical students for the study of current flow in circuits and of direct current machinery. It is also used by the students of other departments who are taking an elementary electrical course, for the study of both direct and alternating current phenomena. The laboratory is equipped with: Shunt, compound and series wound direct current generators and motors of different types; constant current generators; arc and incandescent lamps; meters for the measurement of current, voltage and power; rheostats, circuit breakers, starters and other auxiliary apparatus.

Several small alternators, transformers, rotary converters and induction motors along with the necessary instruments and control apparatus are provided for use by the students taking the general elementary course.

A hand-operated travelling crane gives facility for the rearrangement of the machines.

The Standardizing Laboratory is equipped for the accurate measurement of direct currents to 1,000 amperes and voltages to 1,500 and of alternating currents to 200 amperes and voltages to 1,500. By the use of standard instrument transformers, alternating currents to 5,000 amperes and voltages to any reasonable value may be accurately measured.

The equipment includes: Kelvin current and watt balances; Weston laboratory standard ammeters, voltmeters and wattmeters; potentiometers; Wheatstone and conductivity bridges; galvanometers, standard resistances and cells and other special apparatus.

The power is obtained from two motor generator sets, from one of which direct current to 1,000 amperes may be obtained and

from the other alternating current may be obtained over a considerable range of frequency up to 1.500 amperes and at any phase relation to voltages up to 440.

A considerable amount of commercial work is done in this laboratory, the revenue from which is devoted to the purchase of new equipment for the department.

The High Voltage Laboratory contains the following equipment: Four 200 to 50,000 volt transformers supplied with condenser bushings and insulated so as to operate up to 300,000 volts; one 200 to 2,000 volt insulating transformer; one 110 to 20,000 volt testing transformer; standard spark gaps for oil and air; cathode ray tubes, electrostatic voltmeters and other auxiliary equipment.

The transformers are provided with auxiliary voltage coils for direct pressure measurement and for connection to the oscillograph.

The connections to this laboratory are such that any machine in the department may be used as a source of power and controlled directly from the transformer room, so that a wide range of frequency and of wave form is available for experimental work.

Oscillograph Laboratory. This is equipped with a Blondel triple oscillograph with both visual and photographic attachments and is specially adapted for the study of transient phenomena.

The department maintains a small machine shop for instrument and machine repair and for the construction of special experimental apparatus.

GEODETIC LABORATORY.

The equipment of this laboratory consists of:—

(1) Linear instruments: a Rogers comparator and standard bar for investigating standards of length; a fifty-foot standard and comparator for standardizing steel bands, chains, tapes, rods, etc.; a Munro-Rogers linear dividing engine.

(2) Circular instruments: a Rogers circular comparator; four level triers.

(3) Time: an astronomical clock and clock circuit in connection with the observatory clocks; chronometers running on mean and sidereal time; chronograph.

(4) Gravity: a portable Bessel's reversible pendulum apparatus with special pendulum clock and telescopic apparatus for observing coincidences by beats.

(5) A water gauge apparatus for testing aneroid barometers.

The laboratory and clock rooms are constructed with double walls and enclosed air spaces, and their heating is controlled by special thermostats, so that the temperature within may be brought to, and held at, any desired degree.

Astronomical Observatory.

The observatory equipment for the purpose of instruction in practical astronomy consists of:—

A Bamberg prismatic transit with zenith attachment; five astronomical transits for meridian observations; a Troughton & Simms zenith telescope; sidereal and mean time clocks and chronometers, chronograph and electrical circuits by which observations and clock comparisons within or without the observatory may be made.

HYDRAULIC LABORATORY.

In this laboratory the student studies experimentally the laws governing the flow of liquids through orifices, pipes, weirs, etc., and also carries out experiments on the efficiency of various forms of water motors running under different conditions as regards head and supply.

The equipment includes:—Apparatus for the measurement of the discharge of water from orifices, nozzles, weirs, etc., under varying conditions; arrangements for investigation of the loss of head by surface friction, and at curves and bends in pipes; Venturi meter for use at different discharges; a hydraulic ram working against different heads; various water motors, including Pelton wheels, Girard impulse turbine, Brotherhood three cylinder rotary engine, Thomson inward flow reaction turbine, American turbine; apparatus for measurement of pressure due to impact of jets on surfaces of different forms; gauge testing appliances; Hele Shaw's apparatus for study of the steam lines in a perfect fluid, illustrating the flow round obstructions in a channel, and numerous magnetic problems; numerous calibrated tanks, weighing appliances, and measuring apparatus in connection with the above.

MECHANICAL ENGINEERING LABORATORIES.

These laboratories are used in connection with the courses in Mechanical Engineering subjects. The smaller apparatus belonging to the laboratories includes the necessary equipment of weighing machines, brakes, calorimeters, thermometers, gauges, pyrometers, fuel testers, indicators, planimeters, etc.

1. Mechanical Laboratory.—The equipment of this laboratory includes:—

A belt testing machine capable of taking a six-inch belt at 15 feet centres (the machine has special hydraulic dynamometers and a friction brake and will absorb 15 H.P.); a Thurston railway-pattern oil tester, fitted with water cooling and heating apparatus for varying the temperature of the brasses as desired; an Engler standard viscosimeter, and other necessary apparatus for the physical testing of lubricants; a single speed horizontal engine having a cylinder 6 inches diameter and 9 inches stroke, and operated by compressed air; a gas-fired preheater for the above engine; a standard 9½-inch Westinghouse air brake pump, fitted for testing and for supplying compressed air for experimental and other purposes; a non-rotative Blake steam pump, having steam and water cylinders 4½ and 2¾ inches diameter and 4½ inches stroke; a complete air brake installation for locomotive, tender and cars; apparatus for measuring the heat loss from pipe coverings and from radiators; a specially designed hydraulic support and fittings for carrying out experiments on the action of cutting tools in the lathe; apparatus for experiments on the efficiency of pulleys and hoisting appliances; on the efficiency of worm and other gearing; for governor testing; for testing fans and blowers; for studying problems connected with the balancing of reciprocating engines.

2. Steam Engine Laboratory:—

The steam Laboratory is furnished with an experimental steam engine of 120 I. H.P., specially designed for investigating the behaviour of steam under various conditions; the cylinders are 6½ inches, 9 inches, 13 inches and 18 inches in diameter, and the stroke of all the pistons is 15 inches. The cylinders can be so connected as to allow

of working as a simple, compound, triple, or quadruple expansion engine, either condensing or non-condensing, and with any desired rate of expansion. The jackets are so fitted as to permit of measuring independently the water condensed in the cover, barrel, or bottom jacket of each cylinder, and the engine can be worked with any desired initial pressure up to 200 lbs. per square inch. The measurements of heat are made by means of large tanks, which receive the cooling water and the condensed steam. There is an independent surface condenser and air pump. Two hydraulic absorption brakes and an alternative friction brake serve to measure the mechanical power developed.

This Laboratory also contains the following machinery:—

A Robb automatic cut-off engine, having a cylinder 10½ inches in diameter by 12 inches stroke. This engine is specially fitted up for the measurement of cylinder temperatures, and can be run at speeds up to 300 revolutions per minute.

An automatic high speed engine by Macintosh & Seymour, having a cylinder 12 inches in diameter by 12½ inches stroke. In connection with this engine there is an automatic recording apparatus for registering the load on the brake.

A Leonard horizontal engine, having a cylinder 8 inches diameter by 9 inches stroke, specially fitted for instructional work in valve setting and provided with an independent surface condenser.

A two stage air compressor (built in the workshops of the Department taking 40 H.P., and having cylinders 10 inches and 17 inches in diameter, by 15 inches stroke. The compressor delivers its air into reservoirs placed beneath the floor of the machine shop, and is provided with an intercooler whose capacity can be varied as desired.

A 15 K.W. Curtis steam turbo-generator with independent surface condenser and air pump.

A 12 H.P. high speed forced lubrication compound engine (built in the workshops of the Department).

Steam is supplied to this Laboratory by the boilers in the Workman Building. These consist of one 100 H.P. locomotive boiler, Belpaire type, two Babcock and Wilcox water-tube boilers, each 60 H.P., and one Yarrow water-tube boiler, fitted in a closed stokehold, for working under forced draft, rated at 100 H.P. These boilers are fitted with the necessary tanks, weighing machines and apparatus for carrying out evaporative tests.

3. Gas Engine Laboratory. This Laboratory contains:—

A horizontal gas engine by the National Gas Engine Company, having a cylinder 12 inches diameter by 20 inches stroke and developing 40 B.H.P.; a suction-type producer for the above, with the necessary scrubbers and gas cleaning apparatus; a down draft producer designed for working with lignite and bituminous coal; a standard 4-inch gas meter, gasometer, and exhauster; an Otto type gas engine (built in the workshops of the Department), having a cylinder 8½ inches diameter by 12 inches stroke, and giving 10 B.H.P., with city gas; a 2-cylinder 4-cycle gasoline engine (built in the workshops of the Department), and giving 8 B.H.P.; a 4 H.P. Blackstone oil engine; a one-ton CO_2 ice machine; a B. & W. separately fired superheater.

METALLURGICAL AND ASSAYING LABORATORIES.

These consist of a large furnace room of 2,200 sq. feet, for metallurgical operations, a furnace room for assaying of 1,300 sq. feet, a

balance room, small chemical laboratory, and parts of other rooms, which are utilized for pyrometric and photo-microscopic work. The furnace room is fitted with a water-jacket blast-furnace, 21 inches inside diameter, for smelting lead and copper ores; also a hand reverberatory furnace for roasting ores, having a hearth 14 ft. by 6 ft., a Bruckner roasting furnace, and a small gas producer.

The furnace room adjoins the milling and ore-dressing room (see below) and ores which have been crushed and dressed can easily be conveyed into the furnace room for roasting, smelting or leaching treatments. In addition to this comparatively large scale plant, apparatus has been provided to enable the students to study in detail the more important metallurgical operations, using quantities of ore or metallurgical products of usually not more than a few pounds in weight. With such appliances the work of the student can be of a more individual character than is generally possible with large-scale plants, and the reactions which occur can be more easily and exactly studied.

For the purpose of small-scale work there is a large crucible furnace which can be used with either natural or forced draught, a large gas-furnace which can be used either as an over-furnace or a muffle furnace, and a number of small muffle and crucible furnaces in the assaying laboratory.

Small blast-furnaces, lined with brick, have been constructed and used successfully for smelting small quantities of copper and cobalt ores. A Roots' blower has been provided for the blast furnaces, and connections for supplying forced draft have been made to the gas and reverberatory furnaces. Leaching operations on a small scale are conducted in stoppered bottles which can be agitated by machinery.

Provision has also been made for electric furnace work. The plant consists of a 50 H.P. motor 30 K.W. alternating current generator and transformers with measuring instruments. A Colby induction furnace and a Heroult arc furnace have been installed for making steel electrically, and the smelting of ores and other electric furnace operations can be carried on satisfactorily with this plant. A low-voltage 1 H.P. direct-current generator is employed for electrolytic operations.

A powerful hydraulic press and a piece of apparatus for compressing gases by hydraulic power are available for experiments that have to be conducted under great pressure.

A small drop-testing machine has been constructed for investigating the mechanical properties of metals.

The Assaying Laboratory is equipped with a number of muffle and crucible furnaces fired with coke, a large gas muffle furnace and a small muffle furnace and a crucible furnace fired by gasoline.

Adjoining the Assaying Laboratory is the balance room and a small laboratory for chemical work.

In another room are a number of electrical pyrometers of both the Le Chatelier and Callendar type, and a micro-photographic outfit for recording the microscopic structure of metals and alloys. A polishing machine, worked by power has been installed to prepare the specimens for examination.

MINING AND ORE DRESSING LABORATORIES.

The Department of Mining Engineering has one large laboratory in two storeys for ore-dressing, and a number of rooms of moderate

size equipped for use as special laboratories, offices, lecture room, dark room, machine shop, etc. The effective floor space is about 8,500 square feet, in addition to which the departmental store rooms, ore bins, etc., have an area of 1,500 feet.

The ore-dressing laboratory proper has about 5,000 feet floor space and is 25 feet high in the centre.

It is equipped with two classes of apparatus. First, a large number of pieces especially designed for individual work on a small scale. Many of these are for elementary investigations and demonstrations of a theoretical nature, others are working reproductions on a reduced scale of typical ore-dressing and milling machines. Second, a complete plant of standard apparatus for ore crushing, sampling, milling, concentrating and for coal washing. The apparatus has been chosen from the best designs in common use and whenever possible each important class of ore-dressing machinery is represented by two or more different types, in order that comparisons may be made. Each machine is so arranged that it may be used, tested and cleaned up independently, but, when expedient, a number of machines can be connected by automatic conveyors and thus complete working plants of various kinds can be improvised, each of sufficient capacity to test large lots of material under approximately working conditions.

The chief pieces of apparatus in the main laboratory are rock-breakers of four kinds, Blake, Dodge, Gates, and Sturtevant, for coarse crushing; gravity stamp mills of 600 and 950 lbs., respectively, and a small steam stamp for the fine crushing and amalgamating of gold ores; Huntington centrifugal, roller mill, for crushing and amalgamating; high speed steel-tyred rolls for fine crushing; Sturtevant and Gates' grinders for preparing samples, and a number of ball mills, pebble mills and amalgamation pans for extremely fine grinding.

Following these there are Bridgman, Vezin, Jones and Brunton samplers, and a Callow belt screen and a series of trommels and hand and power shaking screens for sizing the crushed ores; two especially designed jigs of two and four compartments, with adjustable eccentric, cam and slide mechanisms, a pneumatic jig, a Taylor vibrating jig and several small hand and power jigs for coarse concentration; revolving, bumping and stationary tables; a stationary glass table; Frue vanner, Wifley table, Bartlett table, Bartlett canvas table, Bell's classifiers and feeders, etc., for separating valuable minerals contained in the fine sands and slimes; plates, pans and barrels for amalgamating gold and silver ores; vats and other apparatus for cyaniding, chlorinating and other leaching processes; spitzkasten, spitzlutte, magnetic separators, an electrostatic separator, coal washers, cones, and various other special pieces of ore-dressing apparatus.

An hydraulic lift and a number of belt and bucket and hydraulic jet elevators, feeders, samplers, etc., are provided for use in heavy continuous work. The power chiefly used is electricity, generated in the University power and light station, and utilized through a number of independent electric motors aggregating 70 H.P. conveniently placed near the machines to be operated, but steam is used for some pieces of apparatus and others may be driven by a pelton wheel. A belt driven air compressor of 7½ H.P. recently installed in the laboratory provides an ample supply of compressed air. The department is equipped with suitable apparatus for electrical measurements, and is thus able to make continuous and accurate determinations of the amount of power used by each machine.

In addition to the main laboratory there are excellent facilities for advanced and research work—including a small but thoroughly equipped chemical and assay laboratory and photographic room. The department possesses a number of cameras, microscopes, recording gauges and indicators, a good equipment of weighing and measuring devices, and a number of pieces of special apparatus for advanced theoretical investigation.

PETROGRAPHICAL LABORATORIES.

The Petrographical Laboratory, containing the chief rock collections of the University, is situated in the Chemistry and Mining building, and is arranged for the use of students in the Mining Course as well as for those desirous of taking advanced work, such as Graduate students and those taking Honour Courses in Arts. It is provided with a number of petrographical microscopes by Selbert, Crouch, and Fuess, as well as with models, sets of thin sections, electromagnets, heavy solutions, etc., for petrographical work.

A collection of typical rocks have been especially prepared for the use of students, and a complete equipment for cutting, grinding, and polishing rocks, has been installed, which runs by electric power and gives excellent facilities for the preparation of thin sections for microscopic use.

For advanced work and petrographical investigation Dr. Adams' extensive private collection of rocks and thin sections is available for purposes of study and comparison.

THE PHYSICAL LABORATORIES.

The equipment of the Macdonald Physical Laboratories comprises: (1) apparatus for illustrating lectures; (2) simple forms of the principal instruments for use by the students in practical work; (3) various types of all important instruments for exact measurements, to be used in connection with special work and research.

The Magnetic Laboratory contains magnetic instruments and variometers of different patterns, and also a duplicate of the B. A. Electric-dynamometer. The laboratory on the opposite side of the basement contains a Lorenz apparatus for the absolute measurement of resistance, constructed under the supervision of Prof. Viriamu Jones.

There is a Constant Temperature Room, surrounded by double walls, which contains a Standard Rieffler Clock, and is fitted for comparator work.

The first floor contains the main Electrical Laboratory which is a room 60 feet by 40, and is fitted with a number of brick piers, which come up through the floor, and rest on independent foundations, in addition to the usual slate shelves round the walls. This room contains a large number of electrometers, galvanometers, potentiometers, and other testing instruments of various patterns, and adapted for different uses. Three small research laboratories adjoin the electrical laboratory. A well-equipped workshop serves for the construction of research apparatus and repair work.

On the second floor of the building there is the Heat Laboratory, devoted to advanced work in thermometry, pyrometry and calorimetry and also to such electrical work as involves the use of thermostats and the measurement of the effects of temperature. This adjoins a private laboratory fitted for research work. The lecture theatre is

situated on this floor. The third floor contains two small lecture rooms, a library and reading room for the staff, an elementary laboratory and professors' rooms.

The fourth floor contains the large Elementary Laboratory, a room 60 feet square, devoted to elementary practical work in heat, sound, light, electricity and magnetism. There is a demonstrators' room adjoining, and an optical annex devoted to experiments with lenses, galvanometers, etc., which require a darkened room. On the other side of the building there is a spectroscopic room, containing a six-inch Rowland grating, with mountings by Brashear, and other large spectrometers and polarimeters; also a series of smaller optical rooms, including a photometric room, especially fitted for arc photometry and a dark room for photographic work.

LABORATORY OF PHYSIOLOGY.

The Department of Physiology occupies part of the old Medical Building. It consists of a large general laboratory, with accommodation for 80 students working at one time; a lecture theatre, with lantern and projection electrometer; a demonstration theatre for experiments shown to students, and a number of smaller rooms fitted up for work on the physiology of the special senses, aseptic physiological operations, X-ray demonstrations, etc., etc.

THE PSYCHOLOGICAL LABORATORY.

The Psychological Laboratory occupies two rooms in the Arts Building. It contains apparatus for the study and investigation of sensation, perception, ideas, memory, association, attention, volition, feelings, emotions and reaction. This equipment serves three purposes: First, it is adapted to research work in the various fields of experimental psychology, including physiological psychology, educational psychology, and applied psychology. Second, it is used to acquaint beginners with the methods of experimental psychology, both qualitative and quantitative. Third, it furnishes material for experimental demonstration in the elementary and advanced lecture courses.

STRENGTH OF MATERIALS LABORATORIES.

These laboratories are equipped with apparatus for the determination of the physical properties of the materials of construction and for illustrating the fundamental laws of the strength of materials. The equipment includes:—

(*a*) Riehlè testing machine of 60,000 lbs. capacity, a Wicksteed 100-ton and an Emery 75-ton machine for testing the tensile, compressive and transverse strength of the several materials of construction. To the Wicksteed has been added a specially designed arrangement, by which the transverse strength of girders and beams up to 26 ft. in length can be determined. Special holders have also been designed and made in the laboratory for investigating the tensile and shearing strength of timber, and for the testing of wire ropes, belts, etc.

(b) An Impact Machine, with a drop of 30 ft., and with gearing which will enable specimens to be rotated at any required speed, and the blows to be repeated at any required intervals. By means of a revolving drum, a continuous and accurate record of the deflections of the specimens under the blows can be obtained.

(c) A Torsion Machine with a specially designed angle-measurer, by which the amount of the torsion can be measured with extreme accuracy.

(*d*) An Accumulator, furnishing a pressure of 3,600 lbs. per square inch, which is transmitted to the several testing machines, and ensures a perfectly steady application of stress, an impossibility when any form of pump is substituted for an Accumulator. An automatic electric motor has been designed in the laboratory and constructed for the purpose of actuating the accumulator.

(*e*) A Blake and a Worthington steam pump and an electric pump, designed to work against a pressure of 3,600 lbs. per square inch. The Accumulator may be actuated by any of the pumps, and, if at any time it is necessary to do so, any of the pumps may be employed to actuate the testing machine direct. When in operation the work of the pump and the accumulator is automatic.

(*f*) Extensometers of the Bovey, Ewing, Unwin, Martens, Marshall and other types.

(*g*) Portable cathetometers, and also a large cathetometer specially designed and constructed for the determination of the extensions, compressions and deflections of the specimens under stress in the testing machines.

(*h*) Various electric motors for working the several machines.

(*i*) A drying oven for beams up to 26 ft. in length. The hot air in this oven is kept in circulation by means of a fan driven by an electric motor.

(*j*) Numerous gauges, amongst which may be specially noticed an Emery pressure gauge, graduated in single lbs. up to 2,500 lbs. per square inch. All of the testing machines are on the same pressure circuit, and are connected with the Emery gauge and also other standard gauges, including recording gauges. This arrangement provides a practically perfect means of checking the accuracy of the testing.

(k) Special apparatus and recording gauge for the testing of hose, etc.

(*l*) Dynamometers for measuring the strength of textile fabrics, the holding power of nails, etc.

(*m*) Apparatus for determining the elasticity of long wires.

(*n*) Apparatus for determining the hardness of materials of construction.

(*o*) Zeiss and other microscopes.

(*p*) Delicate chemical and other balances. A very important part of the equipment is the Oertling balance, capable of indicating with extreme accuracy weights of from .00001 lb. up to 125 lbs.

(*q*) Apparatus for the microscopic study of metals and for microscopic photography.

(*r*) Micrometers of all kinds.

(*s*) A transverse bending machine which is adapted for loads up to 3,000 lbs. and for beams of 10 ft. span and a testing machine for applying bending and torsion simultaneously.

ZOOLOGICAL LABORATORIES.

The Zoological Department occupies the whole of the uppermost floor of the east wing of the Arts Building and the larger portion of the floor immediately below.

It consists of:—

(*a*) A large laboratory affording accommodation for a class of 100 students.

(*b*) A smaller laboratory capable of seating about 18 students.

(*c*) Three smaller laboratories fitted up for purposes of research.

Dissecting trays, simple and compound microscopes, reasonable quantities of the ordinary reagents and of glass are provided by the department, but students provide themselves with razors for cutting sections.

The Department is provided with four large tanks and a number of smaller ones in order to maintain a supply of fresh specimens throughout the winter.

The laboratories are well provided with thermostats, microtomes, apparatus for microphotographic work and other instruments required for advanced research. There is also a library attached to the department.

The Historical and Embryological Laboratories are located in the old Medical Building.

2. MUSEUMS.

MUSEUM OF ANATOMY.

DIRECTOR:—PROFESSOR F. J. SHEPHERD.
ASSISTANT:—J. C. SIMPSON, D.Sc.
OSTEOLOGIST AND ARTICULATOR:—E. L. JUDAH.

The late disastrous fire completely destroyed the Museum of Anatomy, but steps have been taken to replace the teaching material, and already the department is well supplied. Many specimens have been received from the Army and Navy Museums of Washington, D.C., and from other institutions. Numbers of models and bone preparations have been received from France and Germany, and models of viscera and brain and also many dissections and cross sections have been added. A fine set of moist brain preparations prepared by Professor McCarthy has been added to the museum, also a set of bones showing epiphyses at various ages, and models of perineum, neck, abdomen and lungs, obtained from Steger and others; some fine anthropoid and other typical skeletons have been purchased; also models of various primitive skulls. Many new cross sections of abdomen and chest; also a series of sections of brain *in situ* and preparations of the brain with spinal cord attached have been added quite recently. Specimens of bones, organs, etc., are always on exhibition for the use of students, who can make use of them for special study.

MUSEUM OF HYGIENE.

DIRECTOR:—PROF. T. A. STARKEY.

This museum has been established from the interest accruing through the endowment of the Chair of Hygiene by Lord Strathcona and Mount Royal in 1893.

The material in the museum has been rearranged with a view to exhibiting not only specimens of the best and most approved types of appliances in each particular branch of public health, but also examples of types which are to be avoided on hygienic principles.

In order to facilitate study and reference, the specimens have been classified upon a decimal system under the following sections:—

1. *Disinfection.*—Including disinfecting apparatus, disinfectants and antiseptics.

2. *Lighting and Heating.*—Showing contrivances used for these purposes.

3. *Water.*—Showing underground water and supplies drawn from it; methods of purification on large and small scales, including domestic filtration; exhibits of all the common modes of pollution of water supplies.

4. *Buildings.*—Effects of ground moisture on dwellings; building of all kinds, and measures to be taken against dampness and foul air.

5. *Soil.*—Various kinds of soils, relation between soil and dampness, permeability of soils to gas and water, composition of soils.

6. *Air.*—Including ventilation, climate and meteorology, with apparatus illustrative of each class.

7. *Drainage and Refuse Disposal.*—This section includes every description of sanitary appliances used in building, drainage, and ultimate disposal of refuse, both liquid and solid. The section also includes types of faulty methods.

8. *Foodstuffs.*—Adulterations and modes of transmission of disease.

9. *Clothing.*—Materials and their value for clothing.

10. *Vital Statistics.*—Administration, etc.

11. *Bacteriology and Pathology relating to Public Health.*—Including specimens and slides of all the common micro-organisms, pathogenic and non-pathogenic, specimens of pathological conditions met in meats, etc.

In addition to the regular Museum Exhibit, there is a collection of over 100 lantern slides illustrative of phases of hygiene. The slides have been so arranged as to be available for demonstrations as hand specimens. These slides, as well as all the specimens in the museum, are card catalogued, and a projecting lantern is available for their demonstration.

The following are some of the principal exhibits:—Set of Knight's diagrams and models; working models illustrating house drainage, closets, etc., sewer air, movements of solid air; Doulton's models of drainage, damp proof construction, absorption of moisture in building materials, ventilation appliance, combined heating and ventilation, automatic regulation of heating and ventilation; building materials; fire proofing;; estimation of carbonic acid and moisture in the air; meteorological observation; water supply, water piping; water filtrations of public and domestic supplies; pollution of water supplies; ground water level; sewage and refuse disposal; food supply; food adulteration; examination of milk supplies; disinfection, disinfectants.

PATHOLOGICAL MUSEUM.

DIRECTOR:—PROFESSOR J. G. ADAMI.
CURATOR:—MAUDE E. ABBOTT, B.A., M.D.
ASSISTANT CURATOR:—JOSEPH KAUFMANN, M.D.
OSTEOLOGIST AND PREPARATOR:—E. L. JUDAH.

Since the organization of the Medical Faculty the Pathological Museum has been one of its most cherished objects. Some specimens

still remain upon its shelves donated by the founders of the College (notably a unique case of Cor. Biatriatum Trioculare, reported by Dr. Andrew Holmes in 1823), and for the last fifty years the rich pathological material furnished by the Montreal General Hospital has been collected here. An abundance of material is also now received yearly from the Royal Victoria Hospital, and the Faculty is indebted to many medical men throughout Canada and the United States for important contributions.

The fire of 1907 did severe damage to the Museum and its contents, but, fortunately, the loss sustained was not a total one, about one-third of the material, including many specimens of the greatest historic, as well as medical interest, having been saved. Thus the singularly rich collection of disturbances of the heart and vascular systems and of aneurysms, have been preserved intact, as well as the specimens illustrating the medical pathology of the respiratory, digestive, urinary, and nervous systems. To this nucleus a large number of new specimens have been added, so that the collection already exceeds, both numerically and in teaching value, the material destroyed. Among the many donors who contributed directly to the repair of the losses sustained must be remembered the Army Medical Museum, Washington; Professor J. Orth, Berlin, Germany; Dr. F. W. Andrewes, of St. Bartholomew's Hospital, London; and the many donations received from other foreign sources through the International Association of Medical Museums. In addition, the rich material constantly supplied by the Montreal hospitals (chiefly the Montreal General and Royal Victoria Hospitals), the improved methods of preparing and mounting pathological material, the constant activity of the Museum staff, and the fine new building in which the collections are housed, are factors which, together, make the new Museum superior in every way to the one which it has perpetuated as well as replaced.

THE PETER REDPATH MUSEUM.

HONORARY CURATOR:—PROF. ARTHUR WILLEY.

The large and valuable collections in botany, zoology, mineralogy and geology are arranged in such a manner as to facilitate the work in these departments.

The general arrangement is as follows:—

1. The Botanical Room on the ground floor contains the herbarium, consisting of 50,000 specimens of Canadian and exotic plants and collections illustrating structural and economic botany.

2. On the first floor is a room over the entrance hall, in which are cases containing archæological and ethnological objects, including collections from the Queen Charlotte Islands, from Egypt, and from South Equatorial West Africa.

3. This room opens into the great Museum Hall, on each side of which are alcoves with upright and table cases containing the collection in palæontology arranged primarily to illustrate the successive geological systems, and subordinately to this, in the order of zoological and botanical classification, so as to enable the student to see the general order of life in successive periods, and to trace any particular group through its geological history.

4. At the extreme end of the Hall are placed the collections of minerals and rocks, arranged in such a manner as to facilitate their

systematic study. In the centre of the hall are economic collections and large casts and models.

5. In the upper storey or gallery of the great hall are placed the zoological collections; the invertebrate animals in table cases in regular series, beginning with the lower forms; the vertebrate animals in upright cases, in similar order. THE PHILIP CARPENTER COLLECTION of shells is especially noteworthy for its arrangement and completeness.

Papers or memoirs relating to certain type specimens in the collections can be obtained from the Assistant Curator. Classes of pupils from schools can be admitted on certain days under regulations which may be learned from the Professors or from the Registrar of the University.

3. WORKSHOPS.

The Workshops, erected on the Thomas Workman Endowment, have a floor area of more than 20,000 square feet.

Equipment.—The Carpenter Shop and the Pattern Shop contain thirty-eight carpenters' and pattern-makers' benches complete with the necessary sets of hand tools, twenty-two wood-turning lathes with their turning tools, a large pattern-makers' lathe for faceplate work, one circular-saw bench, a jig-saw, a band-saw, two wood-trimmers, a surface-planer, a thickness-planer, a mortising machine, a saw-sharpener, and one universal wood-working machine.

The Smith Shop is provided with twenty Sturtevant forges which are power-driven and are connected with an exhaust fan. There is a power hammer, and the necessary equipment of anvils, swage blocks, sets, flatteners and other tools. Provision is made for instruction in soldering and brazing.

The Foundry has benches, tools and apparatus for bench and floor moulding and core-making, and is able to accommodate twenty students. A gas-fired brass melting furnace, a cupola for melting iron, and the necessary core-ovens and core-benches give facilities for undertaking iron foundry work in green and dry sand, and for brass moulding. The shop is served by a hand travelling crane of one ton capacity.

The Machine Shop has twelve 18-inch engine lathes, one 18-inch turret lathe fitted for stud and screw making, one 27-inch engine lathe, one 72-inch surfacing lathe, one brass-finishing lathe, one 36-inch vertical drilling machine with compound table, one universal milling machine with vertical milling attachment and dividing head-stock, one planer capable of taking work up to 24″ x 24″ x 5 ft., one 9-inch slotting machine, one 16-inch shaper, one universal grinding machine, centering machine, a cutter grinder, a tool grinder, and a buffing and emery grinding machine. There are vise benches for eighteen students, with the necessary hand-tools, and a marking-off table. The tool-room contains a full equipment of drills, reamers, milling cutters, and accessories, gauges, callipers, and other measuring instruments.

All the machinery in the workshops is driven electrically by motors taking power from the generating station in the Macdonald Building.

GRADUATES.

SESSION 1912-1913.

PASSED FOR THE DEGREE OF BACHELOR OF ARTS.

MEN

Argue, Alan F., Carp, Ont.
Atkins, Basil Elmo, Vancouver, B.C.
Bieler, John Henry, Westmount.
Bradbury, William James, Bay Roberts, Nfld.
Brown, Frederick Ronald, Danville, P.Q.
Bruneau, A. Sydney, Cornwall, Ont.
Buchanan, J. Reginald, Kerwood, Ont.
Busby, Eldon Durward, Ottawa, Ont.
Cockfield, William Egbert, Montreal.
Common, Frank Breadon, Westmount.
Corbett, Percy Ellwood, Fort Qu'Appelle, Sask.
Cunningham, Stanley H., Montreal.
Davison, Frank Cyril, Vancouver, B.C.
Dewey, George Finlay, Westmount.
Donald, James Richardson, Montreal.
Forster, David Stewart, Vancouver, B.C.
Harris, Edmund Parker Dale, Montreal.
Heaton, John Clarke, Westmount.
Honey, Howard Percy, Abbotsford, P.Q.
Jeakins, John W., Waterloo, P.Q.
Kirkpatrick, Earl A. B., Vancouver, B.C.
McCrimmon, Kenneth Howard, Kincardine, Ont.
McGarry, Allan Arthur, Westmount.
MacLean, Kenneth, Strathburn, Ont.
McLeod, William McLaren, Montreal.
Matheson, Homer Lindsay, Waldeck, Sask.
Miller, Iveson Alfred, Calgary, Alta.
Morgan, Henry William, Montreal.
Morison, Charles Keith, Ormstown, P.Q.
Nicholson, William Cedric, Westmount.
Penny, Walter Stewart, Westmount.
Reid, Hugh Simpson, Port Haney, B.C.
Roberts, Lawrence Hamilton, Ottawa, Ont.
Silver, Benjamin L., Brooklyn, N.Y.
Stevenson, Reginald Blackwell, Shoal Lake, Man.
Stewart, John Gordon, Outremont, P.Q.
Wilkes, Alfred Burton, Brantford, Ont.
Wilson, William George Arthur, Shawville, P.Q.

WOMEN

Armstrong, Jean Dunwoodie, Ottawa, Ont.
Beattie, Hester Elizabeth, Victoria, B.C.
Bolton, Grace Alberta, Vancouver, B.C.
Cameron, Anne Watson, Sydney, N.S.
Duff, Dorothy, Montreal.
Hecht, Amelia, Westport, Ont.
Keenleyside, Alice Morgan, Vancouver, B.C.
Larivière, Rose de Lima, Montreal.
Leonowens, Anna Harriet, Montreal.
MacSween, Florence Rebecca, Montreal.
Manny, Louise, Newcastle, N.B.
Morison, Margaret Irene, Ormstown, P.Q.
Mount, Winnifred Binmore, Westmount.
Munro, Sadie Helena, Vancouver, B.C.
Reinhardt, Olive Augusta, Peterboro, Ont.
Ross, Leslie, Richmond. P.Q.
Schwengers, Ada Alice, Vancouver, B.C.
Shanly, Eleanor, Montreal.
Shearing, Helen Agnes, Montreal.
Trapp, Ethlyn, New Westminster, B.C.
Wilder, Kathleen Mary, Westmount.

PASSED FOR THE DEGREE OF BACHELOR OF SCIENCE IN ARTS.

Mewburn, Frank Hastings Hamilton, Lethbridge, Alta.
Pound, Edward Harold, Montreal.
Reilly, Herschell Edward, Shanly, Ont.

PASSED FOR THE DIPLOMA OF COMMERCE.

Cohen, Horace, Rives.
Young, Richard Thomas.

PASSED FOR THE DEGREE OF BACHELOR OF SCIENCE.

(Applied Science).

Explanation of letters following the names:—

(Chem.)	–	–	Chemistry
(Chem. Eng.)	–	–	Chemical Engineering
(Ci.)	–	–	Civil Engineering
(El.)	–	–	Electrical Engineering
(Me.)	–	–	Mech nical Engineering
(Met.)	–	–	Metallurgy
(Met. Eng.)	–	–	Metallurgical Engineering
(Mi.)	–	–	Mining Engineering
(Rys.)	–	–	Railway Transportation

Baily, Philip Pendlebury (Mi.), London, England.
Baker, Douglas Stanley (Ci.), Bexley, England.
Baker, Massy (Mi.), Tipperary, Ire.
Baridon, Frederick William (Mi.), Westmount.
Barry, Robert Crapper (Ci.), Montreal.

Boire, Jules Joseph (Me.) Quebec, P.Q.
Burr, Arthur Vibert (El.), Toronto, Ont.
Burrow, Horace Lavell (El.), Hamilton, Ont.
Cameron, Alan Emerson (Mi.), Ottawa, Ont.
Carson, John Alton (Ci.), Vancouver, B.C.
Chave, Elmer Hargreaves (Ci.) Victoria, B.C.
Christie, John Edward (Ci.), Lachute, P.Q.
Clarke, Atlee Bernard (Mi.), Bear River, N.S.
Crewdson, Eric (Me.), Milnthorpe, Eng.
Crossfield, John Townley Knowles (Mi.), Moorcroft, Eng.
Cunningham, Stanley Hunter (El.), Montreal.
Darling, Gordon (El.), Boyerbourg, P.Q.
Davidson, William Joseph (Me.), Westmount.
Dempster, Reginald Charles (Mi.), Rossland, B.C.
Dodd, George Saville (Ci.), Newport, Jamaica.
Donald, James Richardson, B.A., (Chem. Eng.), Montreal.
Duffield, Colin Munro (Me.), London, Ont.
Duffy, Robb Roy (Ci.), Hillsborough, N.B.
Dunn, James Lewis (Mi.), Minneapolis U.S.A.
Eardley-Wilmot, Trevor (El.,) Perth, Ont.
Elliott, Fergus Edgar (Ci.), Montreal.
FitzGerald, Edward (Ci.), Peterboro, Ont.
Gall, Arthur Stanley (El.), Montreal.
Garrett, Harry Leigh (El.), Sheffield Mills Sta., N.S.
Gorman, Thomas Clarence (Mi.), Ottawa, Ont.
Hamer, Thurston Moseley (Rys.), Mexico City, Mex.
Hamilton, Geoffrey Hubert, B.A. (Ci.), Hollyholm, Southampton, Eng.
Hample, Carl Samuel (Me)., Winnipeg, Man.
Hanley, Alphonsus E. (Mi.), Montreal.
Harvey, Ernest Richard (Ci.,) Lyndhurst, Ont.
Holland, Francis Chaplin (Mi.), Leamington, Eng.
Hollinsed, Richard Eyare Leslie (El.), Barbadoes, B.W.I.
Hugh-Jones, Evan Bonnor (Ci.), Wrexham, Wales.
Jackson, Frederick Stanbridge, (Ci). Nelspoort, South Africa.
Joseph, Kenneth de Sola, (Rys.), Quebec, P.Q.
Kavanagh, Walter Joseph (Me.), Montreal.
Kirby, Thomas Halder (Ci.), Winnipeg, Man.
Lawrence, John Frank (Me.), Hantsport, N.S.
Lewis, John Travers (El.), Ottawa, Ont.
Lyche, Norman Edgar (Ci.), Uclulet, B.C.
Lyster, Horace Muir (Mi.), Kirkdale, P.Q.
McDonald, Louis M., B.A. (Laval), (Ci.), St. John, N.B.
McDonald, Percy Ellicott (Ci.), Hamilton, Ont.
MacDougall, Charles Gordon (El.), Moncton, N.B.
McDougall, Roderic Joseph (Mi.), Vankleek Hill, Ont.
McEvenue, St. Clair (Mi.), London, England.
MacRae, William Alexander (Ci.), Montreal.
Mais, Herbert Roxburgh (Ci.), Kingston, Jamaica.
Mather, Richard Henry (El.), Ottawa, Ont.
Matheson, Walter, Jr. (Mi.), Charlottetown, P.E.I.
Mitchell, William Gordon (Mi.), Port Hope, Ont.
Morrow, Thomas Maclellan (Ci.), St. John, N.B.
Murphy, Stephen John (Ci.), Montreal.
Murray, Charles Ivan (Mi.), Brockville, Ont.
Paddon, Hubert Archibald (Mi.), St. John's, Nfld.
Pickard, Kenneth Stockton (Me.), Sackville, N. B.
Pilcher, Edward Elliott Incledon, B.A. (Ci.), Oxford, Eng.

Pullen, John, Jr. (Rys.), Westmount.
Roche, Ivor Francis Rees (Ci.), Montreal.
Ryan, Charles Cedric (Me.), Sackville, N.B.
Sargent, Albert Elbridge (Me.), Montreal.
Skelton, Philip Hanbury (Me.), Montreal.
Starke, Henry MacDermott (Me.), Rochester, N.Y.
Stavely, Walter D. (Ci.), Montreal.
Tait, Irving Richard (El.), Montreal.
Thompson, George Harry (El.), Oxford, N. S.
Traversy, Valmore Isidore (Ci.), Westmount.
Turnbull, Alan (Me.), Hamilton, Ont.
Warburton, James Arthur (Mi.), Charlottetown, P.E.I.
Weir, James (Ci.), Saskatoon, Sask.
Wilson, William Bowman (Mi.), Ottawa, Ont.
Wilson, William James (Ci.), Ottawa, Ont.
Wright, Walter Genge (Me.), London, Ont.

PASSED FOR THE DEGREE OF BACHELOR OF CIVIL LAW.

Burke, Michael Thomas, B.A. (Laval), Montreal.
Conroy, Paul Servillian, Montreal.
Dunlop, James, Jr., Montreal.
Elder, Aubrey Huntingdon, B.A., Westmount.
Fineberg, Nathaniel S., M.A., Montreal.
Gillmor, Daniel Percy, B.A., St. George, N.B.
McDonald, Albert J. Montreal.
McDougall, Edward Stuart, B.A., Westmount.
MacNaughton, John, B.A. (N.B.), Black River, N.B.
Mariotti, Humbert Cecil George, B.A., Montreal.
Mulvena, Henry Robert, B.A(. Laval), Sherbrooke, P.Q.
Newcombe, Edmund Freeman, B.A., Ottawa, Ont.
Papineau-Couture, Réné, B.A., Montreal.
Paré, J. Hormisdas, Quebec, P.Q.
Popliger, Isidore, Montreal.
Solomon, Nathan, Montreal.

PASSED FOR THE DEGREE OF DOCTOR IN DENTAL SCIENCE.

Gold, Maxwell, Montreal.
Gross, Harry Sim., Montreal.
Solomon, Arthur S., Montreal.
Wathen, James McKechnie, Harcourt, N.B.

ADMITTED TO THE DEGREE OF MASTER OF ARTS.

Brown, Vera Lee, B.A.
Dewey, Alexander Gordon, B.A.
Ellison, Myra King, B.A.
Going, Margaret Chase, B.A.
Grimes, Evie Mina, B.A.
Irving, William Gordon, B.A.
McBain, Alexander Rose, B.A. (Dalhousie).
Robinson, Bernard S., B.A.
Schafheitlin, Anna, B.A.
Stalker, Archibald, B.A.
Steacy, Frederick William, B.A.
Thomson, Herbert Fergus, B.A.

ADMITTED TO THE DEGREE OF MASTER OF SCIENCE.

Billington, Edward Eric, B.Sc. (Liverpool).
Cooper, Corin Henry Benedict, B.Sc.
Cumming, Charles Linnaeus, B.A. (Oxford), B.Sc.
Dufresne, Joseph Alphonse Olivier, B.A.Sc. (Laval).
Kirkpatrick, Robert, B.A. (Clark).
Lamb, Henry Melbourne, B.Sc.
Porter, Cecil George, B.Sc.
Scott, Arthur Alexander, B.Sc.

ADMITTED TO THE DEGREE OF DOCTOR OF PHILOSOPHY.

Krieble, Vernon K., Ph.B. (Brown), M.Sc. (McGill).

SCHOLARSHIPS AND EXHIBITIONS.

SESSION 1912-1913.

FACULTY OF ARTS.

I. First Year Scholarships and Exhibitions.

(In Order of Merit.)	Value
McCall, Marion (Napanee Collegiate Institute), Napanee, Ont.	$300.00
Cameron, Margaret Mary, Sydney, N. S.	150.00
Howard, Waldorf V. (Montreal High School), Montreal	100.00
Douglas, Allie V. (Westmount Academy), Westmount	100.00
Gardner, Adolph (Quebec High School), Quebec	100.00
Grigg, Alexander Phelps (Westmount Academy), Westmount	100.00
Whiteside, Arthur B. (Lachute Academy), Plaster Rock, N.B.	100.00
Weinfield, Rachel (Montreal High School), Montreal	100.00
Macfarlane, Joseph H. (Westmount Academy), Westmount	100.00
Tom, Reginald Fitton, (Kamloops High School), Kamloops, B. C.	100.00
Ralston, Harold E. (Bedford Graduates' Society Exhibition)	100.00
Sanders, Joseph L. (P. S. Ross Exhibition)	100.00

II. Second Year Exhibitions and Bursaries.

(1). Exhibitions.

Name	Subjects of Examination	Value
Scriver, Walter deM.	English, French, Mathematics	$150.00
Sperber, Sara	French, German, English	150.00

(2). Bursaries.

Name	Subjects of Examination	Value
Bennett, Leslie F.	English, French, Physics	$75.00
Sutherland, Murray C.	English, Latin, Mathematics	75.00
Withey, Albert N.	English, Greek, Latin	75.00

III. Third Year Exhibitions and Scholarships.

(1). Exhibitions.

Name	Subjects of Examination	Value
Fritz, Clara W.	Zoology and Botany	$150.00
Mace, Alice K.	(Hannah Willard Lyman)	50.00

(2). Scholarships.

NAME	SUBJECTS OF EXAMINATION	VALUE
Willis, Helen A.	English and Latin	$300.00
Gentles, Henrietta S.	Latin and French	300.00
Goldstein, H. Marjorie	French and German	300.00
Henry, E. Violet	Mathematics and Physics	300.00

Mackenzie Exhibitions.

NAME	SUBJECTS OF EXAMINATION	VALUE
Wilgress, L. D.	First Exhibition	$100.00
Viner, Jacob	Second Exhibition	100

IV. Fourth Year Exhibition.

NAME	VALUE
Miller, Iveson A.	$100.00

FACULTY OF APPLIED SCIENCE.

I. Canadian Pacific Railway Scholarships.

Leslie, Eric (Montreal High School), Westmount.
Shrimpton, Dudley J. (Westmount Academy), Westmount.

II. Grand Trunk Railway Scholarships.

Johnson, Lorne I. (Ottawa Collegiate Institute), Ottawa, Ont.
Harris, Victor Bassett (Verdun Academy), Verdun, P.Q.

REGISTER OF STUDENTS.

SESSION 1912-1913.

FACULTY OF ARTS.

First Year.

(McGill College)

Name	Home Address	Where Last Educated
*Abbott-Smith, Reginald B.	Westmount	Perse School, Cambridge
Abinovitch, Philip	Westmount	Montreal High School.
Adair, Cyril Harris	Westmount	Montreal High School.
Allen, James Stuart	Vancouver, B.C.	St. Andrew's College.
Armitage, E. Trenholme	Montreal	Montreal High School.
Armstrong, Wilmer C.	Shawville, Que.	Albert College, Belleville.
Atkins, John Allen	York, England	Diocesan College.
Auld, Frederick Clyde	Charlottetown, P.E.I.	Prince of Wales College
Bailey, David Robert	New Bonaventure, Newfoundland	Diocesan College.
Baillie, George Irvins	Montreal	
Baker, Lewis	Prince Albert, Sask.	Prince Albert High Sch.
Barrett, John E. R.	Westmount	Westmount Academy.
*Baxter, James	Walton, N.S.	Mt. Allison University.
Beach, George A.	Ottawa	Studyvera.
Brook, Reginald Arthur	Montreal	Birkbeck College, Eng.
Brooks, Charles L.	Montreal	Westmount Academy.
*Brown, Colin Irvine	St. Johns, Que.	Quebec High School.
Buchanan, Angus Gladstone	Neil's Harbor, N.S.	Halifax Academy.
Chauvin, Edward Henry	Montreal	Montreal High School.
Cliff, Ernest Howard	Montreal	Montreal High School.
Copeland, John Gardner	Cornwall	Cornwall High School.
*Cross, George Bond	Trinity, Nfld.	Private Tuition.
*Deschamps, Albert, Jr.	Brockton, Mass.	Brockton High School.
Diner, Louis	Montreal	Montreal High School.
Donald, Frederick Cecil	Montreal	Montreal High School.
*Donaldson, Alexander	Alva, Scotland	Presbyterian College.
Drury, Carl G.	Nashville, Tenn.	Wallace University.
Everett, Herbert Stewart	St. Andrews, N.B.	C. C. G. S.
*Fisher, Fred	Montreal	Westmount Academy.
Fisher, Philip Sydney	Montreal	Montreal High School.
Fleck, William Westwood	Montreal	Montreal High School.
Friedman, Arthur Noel	Westmount	Shortell's Academy.
Gardner, Adolph	Quebec	Quebec High School,
*Galbraith, Robert Harman	Montreal	Stanstead, Que.

*Partial.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
*Giles, George Reid	Lachute	
*Gillanders, John Reid	Lemesurier, Que.	Danville Academy.
*Goldstein, Charles A.	Montreal	Upper Canada College.
Gordon, John Keith	Winnipeg	University School, Vict.
Grandy, William M.	Garnish, Nfld.	
Grigg, Alex Phelps	Westmount	Westmount Academy.
*Hall, Joseph E.	New Haven, Conn.	Bishop's College School.
Harold, Joseph James	Montreal	London College.
Hart, Harry Harper	Montreal	Montreal High School.
Hatcher, William Hooper	Montreal	Methodist College, St. John's, New Nfld.
*Herbison, James Campbell	Montreal	Presbyterian College.
Hibbard, Charles Ambrose	Montreal	Rothesay College.
*Holmes, James	Hull, England	
Howard, Waldorf Vivian	Montreal	Montreal High School.
Hutchison, Paul Phelps	Westmount	Montreal High School.
*Irwin, William Alexander	Montreal	Presbyterian College.
Jacques, Alfred St. George	Quebec	Quebec High School.
Jameson, Murray Campbell	Bedford, Que.	Bedford Academy.
*Jones, Charles Sinclair	Montreal West	Presbyterian College.
*Jones, Thomas William	Montreal	Congregational College.
*Joyce, Henry	Montreal	Presbyterian College.
*Kay, Andrew	Fifeshire, Scotland	Dauphin Collegiate, Man.
Kennedy, Robert Arthur	Dalesville, Que.	Lachute Academy.
Larivière, Henry Alfred	Bethany, Que.	Pointe-aux-Trembles Mission School.
*Ledingham, Alexander Davidson	Montreal	Presbyterian College.
Leitch, Robert S.	Glen Brook, Ont.	Presbyterian College.
Lightbody, Cluny James	Edinburgh, Scotland	Y.M.C.A. College, Springfield, Mass.
Lighthall, William Schuyler	Westmount	Westmount Academy.
*Long, William Earls	Kinlough, Ireland	Model S., Ballymena.
Lougheed, Edgar Donald	Calgary	Western Canada College
*McDonald, Douglas Ogilvie	Sutton, Que.	Trinity College School.
Macfarlane, Joseph H.	Westmount	Westmount Academy.
MacKay, John	St. Davids, Ont.	Presbyterian College.
MacKay, Reay	St. John, N.B.	Rothesay Collegiate.
*McKendrick, James Miller	Clydebank, Scotland	Y.M.C.A., Montreal.
*McKenzie, Chas. Russell	North Sydney, N.S.	North Sydney Academy.
*McLaren, Donald R.	Vancouver, B.C.	Westminster Hall.
*McLean, Angus Ethelbert	Montreal	Montreal High School.
McLennan, Guy Stuart	Lancaster, Ont.	Little Hermitage.
*McLeod, Donald William	McCrimmon, Ont.	Presbyterian College.
Macmillan, Allan John	Ottawa	Ottawa Collegiate.
Macara, John Lawrence M.	Ottawa	Ashbury College.
Martin, Charles Stuart	Westmount	Bishop's College School.
Maxwell, Gordon N.	Seely's Bay	Athens High School.
Mazur, William Mortimer	Montreal	
Mendelssohn, Jack	Montreal	Montreal High School.
*Mercer, George Lionel	Bay Roberts, Nfld.	Wesleyan College
*Mitchell, Wilfred Barnard	Lisbon, Portugal	

*Partial.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Mount, Ernest Frederick	Westmount	Westmount Academy.
Murison, Charles Alex. P.	Montreal	Trinity College School.
Myerson, Moses H.	Montreal	Montreal High School.
*Neubane, Ferdinand J.	Eugene, Oregon	University of Oregon.
*Nicholls, Joseph L.	Coatbridge, Scotland	Presbyterian College.
Parkins, Gerald Adams	Montreal	Lower Canada College.
Patterson, Nolan Tweeddale	Montreal	Shortell's Academy.
*Penny, Hugh	Montreal	Presbyterian College.
Planche, Lancelot Stuart	Cookshire, Que.	Cookshire Academy.
Pope, Alexander McKean	Montreal	Presbyterian College.
Ralston, Harold Edward	Knowlton, Que.	Knowlton Academy.
Risteen, Clifford S.	Vancouver, B.C.	St. Andrew's College.
*Rivard, Louis Theophile	Montebello, Que.	
Robinson, Eric Lindsay	Montreal	Montreal High School.
Rosevear, Alfred Beatty	Montreal	Westmount Academy.
*Samuel, Cecil O.	Liverpool, Eng.	Private Tuition.
Sanders, Joseph Leonard	Ottawa	Ottawa Collegiate.
Schachter, Louis	Montreal	Montreal High School.
Scharf, David John	Montreal	Montreal High School.
Schofield, John Harper	Port Rowan	Ontario.
Schwartz, Bernard	Montreal	Montreal High School.
Scott, John Alexander	Ottawa	Ottawa Collegiate.
*Shannon, Robert E.	Bath, England	Monkton Combe School
*Shapiro, Joseph	Montreal	
Sicard, Lionel John Samuel	Buckingham, Que.	Buckingham Academy.
Sigler, Max I.	Montreal	Montreal High School.
*Sisco, Gordon Alfred	Coaticook, Que.	Coaticook High School.
Smith, Theodore Thomas	St. Johns, Que.	Stanstead.
Snetsinger, Wilfred Goodall	Moulinette, Ont.	Ashbury College.
*Spencer, Rudolf E. C.	London, England	
Strange, Robert	Montreal	Presbyterian College.
Steed, Joseph Arthur	Montreal	Congregational College.
Tate, Bertram B.	Larawls, Que.	Ottawa University.
Tate, George Lee	Larawls	St. Bernard College.
Thistle, Willis	Broad Cove, Nfld.	Salem.
Thompson, Grattan D.	Montreal	Lower Canada College
Tidmarsh, Clarence J.	Charlottetown, P.E.I.	
Tom, Reginald Fitton	Vancouver, B.C.	Kamloops High School
Tucker, George Samuel	Montreal	Trinity College.
Wagner, Harry	Montreal	Montreal High School.
*Walsh, Albert R.	Orono, Ont.	
Werry, Royal E. C.	Montreal	Montreal High School.
White, Patrick Joseph	Montreal	St. Ann's.
Whiteside, Arthur Barlow	Plaster Rock, N.B.	Lachute Academy.
Wieland, Walter Andrew	Montreal	Montreal High School.
Williams, Peter W.	St. John's, Nfld.	
Williamson, Allan	Montreal	Lower Canada College.
*Wilson, Bradley Alexander	Montreal	Private Tuition.
Wiselberg, David	Montreal	Montreal High School.
Wright, William Edward	Prescott, Ont.	Prescott High School.
Young, Elrid Gordon	Montreal	Quebec High School.

*Partial.

(*Royal Victoria College*)

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
*Atkin, Grace Margaret D.	Birkenhead, Eng.	Wycombe Abbey School.
*Balch, Marguerite Robards.	Utica, N.Y.	Utica Free Academy.
Block, Ethel	Montreal	Girls' High School.
Burrell, Pearl R.	Côte des Neiges	Girls' High School.
Cameron, Margaret Mary	Sydney, C.B.	Private Tuition.
Corner, Mabel Elizabeth	Outremont	Westmount Academy.
Cross, Bessie	Westmount	Westmount Academy.
Currie, Mary Elizabeth	Perth, Ont.	Perth Collegiate.
*Dawson, Mary Ruth	Westmount	Montreal High School.
*Dettmers, Isabel P.	Westmount	Westmount Academy.
Douglas, Allie Vibert	Westmount	Westmount Academy.
*Dupuis, Blanche	Montreal	
Ellison, Eliz. McIlvaine	Vernon, B.C.	Trafalgar Institute.
England, Grace Mary	Magog, Que.	Stanstead Collegte.
*Ferguson, Rosalind	Dalhousie, N.B.	
Fraser, Helen	St. John's, Nfld.	Trafalgar Institute.
Garth, Dorothy Mildred	Montreal	Private Tuition.
*Gibb, Margaret Murray	Montreal	Westmount Academy.
*Gray, Dorothy	Montreal	Com. & Tech. High Sch.
Gray, Ethel	Montreal	Com. & Tech. High Sch.
*Harvey, Ruth	Montreal	The Carleton School, Ottawa.
Henry, Ethel Plant	Westmount	Westmount Academy.
*Irwin, Lilian Doris	Montreal	Montreal High School.
Jarvis, Leah May	Montreal	
Kelley, Helen Lottie	Huntingdon, P.Q.	Huntingdon Academy.
*Klineberg, Sophie	Montreal	
*Ladden, Sophie	Montreal	
Lees, Mary Harvie	Montreal	Hillcrest School.
Lemieux, Pauline		
*Levinson, Lillian H.	Montreal	Montreal High School.
*Lindsay, Marion Louise	Woodstock, N.B.	Woodstock High School.
McCall, Marion	Montreal	Napanee Collegiate.
McCallum, Cecil Olga	Montreal	
McCaw, Gladys Wilhelmina	Montreal	Hillcrest Academy.
McCormick, Ada G.	Ottawa	Ottawa Collegiate.
McCullough, Narrola Ruth	Newport, Vt.	Burlington.
McDonald, Grace	Montreal	Trafalgar Institute.
Major, Charlotte	Montreal	
*Markus, Hortense Ruth	Montreal	Montreal High School.
*Martin, Helen Elizabeth	Westmount	
*Matts, Edith E.	Montreal	Montreal High School.
Melvin, Alice J. E.	St. John, N.B.	St. John High School.
Milligan, Marjorie Kerr	St. John, N.B.	St. John High School.
Muir, Mary Dale	Lauder, Man.	Montreal High School.
Paterson, Georgianna U.	Vancouver, B.C.	
*Scott, Jean Murray	Montreal	Montreal High School.
Seiden, Antonia	Montreal	Hillcrest Academy.
Shearing, Ruth Muriel	Montreal	Technical High School.
Smyth, Jessie Alice Paterson		

*Partial.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Sproule, M. Pauline	Chatham, N.B.	St. Thomas College.
Talpis, Sarah Kathleen	Montreal	Montreal High School.
Tees, Frances Myrtle	Montreal	Montreal High School.
*Viner, Bessie	Montreal	
Ward, Ethel Harriet	Verdun	Verdun Model School.
Weinfeld, Rachel Hannah	Montreal	Montreal High School.
Younger, Annie Christy	Montreal	

SECOND YEAR.

(*McGill College*)

Abbott, John Alexander	Senneville, P.Q.	Bishop's College School.
*(2)Bain, George Nathaniel	Trinidad, B.W.I.	Private Tuition.
Ballantyne, Linton Hossie	Westmount	Crichton School.
*(2)Baron, John Oliver	Montreal	Salford, England.
Beatty, Harry Chandler	Stanbridge East, P.Q	Bedford Academy.
Bennett, Leslie Francis	Brookbury, Que.	Cookshire Academy.
Bernfeld, William	Montreal	Montreal High School.
Bernstein, Ben	Montreal	Montreal High School.
Beveridge, William W.		
Bieler, Etienne Samuel	Westmount	Montreal High School.
Bloomberg, Max William	Montreal	Montreal High School.
*Bott, Harold	Riverfield, P.Q.	OrmstownAcademy,P.Q.
Brady, William Homer	Frelighsburg, P.Q.	Bedford Academy.
Bresse, Robert W.	Waterloo, Que.	Waterloo Academy.
Burn, George Drummond	Ottawa, Ont.	Ashbury College, Ottawa
Calhoun, Charles Kingsley.		
Clark, Paul Somerville	Westmount	Westmount Academy.
Cohen, Horace Rives	Montreal	Montreal High School.
*Craner, Harry	Whitby, Eng.	
Cushing, Eric Albert		
*Doggett, Albert Samuel	Oakington, Eng.	
Dowd, William Ritchie	Ottawa	Private Tuition.
Duclos, Eugene	Westmount	
Fraser, Robert Adam	Westmount	Montreal High School.
*Fresque, Herbert	Ottawa, Ont.	Pointe aux Trembles Sch.
Gibb, Stewart Hilson	Montreal	Montreal High School.
Giles, Elmer Stewart	Lachute, P.Q.	Lachute Academy.
*Gillanders, Henry Edwin	Lemesurier, P.Q.	Danville Academy.
Goldwater, Charles	Montreal	Montreal High School.
Henry, Hugh Donald		
Heslam, Gordon Herbert	Sweetsburg, P.Q.	Cowansville High School.
Hinton, Albert	Rawdon, Que.	
*Hurst, John	Montreal	
Jess, John Andrew	Montreal	Presbyterian College.
Johnston, Morgan Macfarlane (B.Sc. Course)	Westmount	Shortell's Academy.

*Partial.

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NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Kearney, Clarence J.	Danville, P.Q.	Danville Academy.
Kennedy, Thomas E.	Ripley, Ont.	Kincardine High School.
*Knowles, Thomas	Trenholmville, P.Q.	St. Francis College H.S.
LeBel, Joseph Onesime	Ste. Perpetue	Pointe aux Trembles Sch
*Legg, Charles Wesley	Portsmouth, Eng.	Portsmouth High School
Levine, Lyon	Montreal	Montreal High School.
Little, Robert		
Luddington, W. H.	Gloucester, Mass.	Picton Academy.
*Lummis, Wallace J. H.	Boscobel, Que.	Diocesan Coll., Montreal
McCabe, Charles Penny	Montreal	Wesleyan Theolog. Coll.
McClement, Frederick John	Montreal	Wesleyan Theolog. Coll.
McDonald, Dawson	Montreal	Loyola College.
McGill, Frank Scholes (Comm. Course)	Montreal	Montreal High School.
McLean, Donald (Comm. Course)	W. Vancouver	Prince of Wales College.
McMullan, Stanley	Tatehurst, Que.	Ormstown Academy.
McNaughton, John Leslie	St. Raphael W., Ont.	Presbyterian College.
McWilliam, William A.		
Mahaffy, Herbert Laurence	Westmount	Westmount Academy.
Manning, Clinton Edgar	Magog, Que.	Stanstead College.
*(2) Mathewson, Cornelius K.	Sinclair, Man.	Manitoba College.
Moody, Thomas Benjamin	Montreal	Welseyan Theolog. Coll.
Moran, James (B.Sc. Course)	Blackhead, Nfld.	Methodist College, St. John's Nfld.
*Norman, William Henry	Minehead, Eng.	
O'Halloran, Melbourne	Ottawa, Ont.	Ashbury College, Ottawa
O'Leary, Harry	Richibucto, N.B.	Loyola College.
*Oliver, Allen	Ottawa, Ont.	Studyvera.
Orr, Arthur Joseph	Barnet, Eng.	
Oughtred, Clifford T.	Marbleton, Que.	Stanstead College.
Paul, Wendell Lawrence	Montreal	Yale University.
Rexford, Orin Bain	Montreal	Montreal High School.
Rivard, Emile Augustan	Montebello, Que.	
Robertson, James Hilary	Montreal	Lower Canada College.
Ross, Charles Brown	Lucan, Ont.	Lucan High School.
Scott, Robert Dewitt	Montreal	Montreal High School.
Scriver, Walter de M.	Westmount, Que.	Montreal High School.
Stuart, Lorne Jas.		
Sutherland, Francis C.		
Sutherland, Murray C.	Kingsbury, Que.	St. Francis College H.S.
Upham, George Ashton	Vancouver	Vancouver High School.
Walker, E. J. E.	Huntingdon, Que.	Huntingdon Academy.
Warneford, Francis H. S. (B.Sc. Course)	Antigua, B.W.I.	Antigua Grammar Sch.
Warriner, Norman D.	Montreal	Montreal High School.
Williamson, Norman T.	Westmount, Que.	Crichton School.
Withey, Albert N.	Montreal	Diocesan Coll., Montreal

*Partial.

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NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Workman, Ellis E. (B.Sc. Course)	Montreal	Shortell's Academy.
Wornell, William P.	St. John's, Nfld.	Methodist College, St. John's, Nfld.
*Young, Edgar Vernon	Montreal	
Young, Richard Thomas (Comm. Course)	Ottawa, Ont.	Ottawa Collegiate Inst.

(Royal Victoria College).

Bennetts, Marjorie F.	Ottawa, Ont.	Ottawa Collegiate Inst.
Boyd, Jessie Marion	Westmount	Girls' H. Sch., Montreal.
Braidwood, Theodora C.	Montreal	Trafalgar Institute.
Childs, Mary C. C.	Montreal	Girls' H. Sch., Montreal.
*Common, Margaret A. G.	Montreal	Girls' H. Sch.. Montreal.
Demuth, Lillie	Grand Forks, B.C.	Grand Forks High Sch.
*Dillon-Lawrence, Anne B.	Westmount, Que.	Hillcrest Academy.
Drummond, Lillian		
*Dumaresq, Mabel A.	Westmount, Que.	Hillcrest Academy.
Dyke, Millicent Auber	Westmount	Westmount Academy.
*Erdrich, Fanny L.	Montreal	
Ewing, Grace Irene	Pike River, Que.	French Methodist Inst.
Harvey, Mary Grace	Montreal	St. John High School.
Hibbard, Margaret Eleanor	Iberville, Que.	St. Johns High School.
Hibbard, Winnifred Mae	Iberville, Que.	St. Johns High School.
Huntley, Ruth Helena	Searcy, Arkansas	Convent of the Holy Name, Mont.
*Kitchener, Mary Edme	Bermuda	
McDonald, Bessie	Grand Bank, Nfld.	Normal School, Nfld.
MacLennan, Mary M. C.	Chateauguay Basin, P.Q.,	Norwood H.S., Norwood, Ont.
Macoun, Mary	Ottawa, Ont.	Ottawa Collegiate Inst.
Mitchell, Grace E.	Lachine, Que.	Westmount Academy.
Morrison, Edna M.		
Mosley, Wreatha	Westmount, Que.	Westmount Academy.
Murray, Doris Audrey	St. John, N.B.	"Netherwood," Rothesay.
Percival, Eleanor S.	Westmount, Que.	Westmount Academy.
*(2)Prather, Zelma V.	Montreal	Girls' H. Sch., Montreal.
Purdy, Annie Peril	Waterloo, Que.	McGill Normal School.
Purdy, Delia A.		
*Rittenhouse, Frances	Westmount, Que.	Westmount Academy.
*Ross, Evelyn D.	Westmount	
*Sawyer, Maud	Montreal	Oberlin Academy.
Sheridan, Mary Madeleine.	Montreal	Sacred Heart Academy.
Silver, May N.	Westmount, Que.	Miss Edwards'.
Smith, Zoe Baldwin	Westmount, Que.	Aurora High School.
Sperber, Sarah	Montreal	Girls' H. Sch., Montreal.
Thomson, Jessie I.	Montreal	Girls' H. Sch., Montreal.
Waterman, Rosalie A.	St. John, N.B.	St. John High School.
Woods, Edythe Evelyn		

*Partial.

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THIRD YEAR.

(*McGill College*)

NAME.	HOME ADDRESS.
Bernfeld, Max	Montreal.
Birks, Henry Gifford	.....
Blair, Roy Jay	Rockburn, P.Q.
Bradford, Walter Russell	Granby, P.Q.
Burton, Garland Granter	Greenspond, Nfld.
Busby, Edward Maurice	Vancouver, B.C.
Chown, Henry Bruce	Winnnipeg, Man.
Cooper, Godfrey	Reading, Eng.
Denny, Joseph	London, Eng.
Douglas, Cedric Stuart	Waterloo, P.Q.
Fairgrieve, Robert	London, Eng.
Ferguson, Richard Martin	Nelson, B.C.
Findlay, Eber Alva	Levis, P.Q.
Ford, Eric A.	Portneuf Sta., P.Q.
Fowler, Frederick Gordon	Redmerley, Eng.
Fry, Henry Stevenson	Westmount.
*Gale, Royce Laberee	Waterville, P.Q.
Garber, Michael	Montreal.
Goodrich, Max. W.	Stanbridge Sta., P.Q.
*Graham, Cyril Cuthbert	Ottawa, Ont.
*Green, Charles Horace	Victoria, Australia.
Griffith, Harold Randall	Montreal.
Griffith, Hugh B. (B.Sc. Course)	Montreal.
Hardwick, John	Portishead, Eng.
Hawkins, Edwin	Warwick, Ont.
Hemming, Henry Harold (B.Sc. Course)	Montreal.
Henson Ernest Frederic	Windsor, Eng.
Holden, Rufus Clement	Westmount.
Hughson, J. W.	.....
Johnston, Norman D. (B.Sc. Course)	Westmount.
Lavery, William James	Evanston, Ill.
LeMay, Albert	Ottawa, Ont.
MacArthur, Robert Alex	Detroit, Mich.
McConnell, William F	Ballynahinch, Ireland.
McDiarmid, Benjamin	Edmonton, Alta.
McGuire, Donald	.....
MacIntosh, Wm. A. Stanley	Apple Hill, Ont.
*MacKeen, Henry P.	Halifax, N.S.
McKenzie, C. Spurgeon	Charlottetown, P.E.I.
McKenzie, John Wendell	Charlottetown, P.E.I.
McKeown, James Day, (Comm. Course)	Montreal.
MacPhail, Jeffrey Burland	Montreal.
McTavish, Charles Hugh	Vancouver.
Millson, Alvin Ernest	Munro, Ont.
Morrison, Donald M.	McCrimmon, Ont.
*(3)Nichols, Lawrence Howard	Montreal.
Parkes, Alfred John R.	Sherbrooke, P.Q.

*Partial.

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NAME.	HOME ADDRESS.
Patrick, Ivan Young	Halifax, N.S.
Quin, Frank Ashton	Christiansted, D.W.I.
*Rattray, John Andrew	Montreal.
Reid, George E.	London, Ont.
Richardson, Thomas Mallory	Regina, Sask.
Rowat, Richard Miles	Athelstan, P.Q.
Samson, Percy V.	London, Eng.
Scott, Howard Elliott	Westmount.
Scott, Stanley L.	
Skinner, Donald Chipman	St. John, N.B.
Stewart, Clarence James	Cazaville, P.Q.
Struthers, Robert Rolf	Montreal.
Taylor, John Ross	Montreal West.
Teale, A. E.	
Tinling, Chas. Burnaby	Montreal.
Viner, Jacob	Montreal.
Warshawsky, Herman	Montreal.
Weston, Albert Henry	Montreal.
Wilgress, Leolyn Dana	Vancouver, B.C.

(*Royal Victoria College*).

Black, Caroline Elizabeth	Genoa, P.Q.
Bodie, Isabel Ann	Vancouver, B.C.
Burridge, Caroline N.	
Cameron, Ethel Kathrine	Winchester, Ont.
Chauvin, Edith	Montreal.
Fritz, Clara W.	
Gentles, Henrietta S.	Westmount.
Glendinning, Maud Gertrude	Lancaster, Ont.
*Goldstein, Dorothy	Montreal.
Goldstein, Hildred Marjorie	Montreal.
Goldwater, Jeannette	Lachine Locks, P.Q.
Grimes, Nellie May	Montreal.
Hadrill, Margaret	
Hamilton, Mary Wallace	
Hay, Margaret E.	Lachute, P.Q.
Henry, Elizabeth Violet	Westmount.
Hewlings, Gwendolyn N.	Victoria, B.C.
Howard, Eva Osyth	Cornwall, Ont.
*Kent, Evelyn	Westmount.
Leonard, Elaine Agatha	London, Ont.
Leslie, Ida Pearl	Westmount.
Lingle, Nettie C.	Rossland, B.C.
Longworth, Mabel Elizabeth	Charlottetown, P.E.I.
McArthur, Hazel A.	Vancouver, B.C.
McCaw, Isabel C.	Longueuil, P.Q.
MacKeen, Alice C.	Glace Bay, N.S.
McNiven, Margaret	Vancouver, B.C.
Mace, Alice Beatrice K.	Montreal.
Morgan, Clovis Browning	Vancouver, B.C.
Racicot, Elfreda Hazel	Waterloo, P.Q.

*Partial.

NAME.	HOME ADDRESS.
Robinson, Jean	Vancouver, B.C.
Rogers, Gladys Emma	Vancouver, B.C.
Ryan, Grace Lee	Vancouver, B.C.
Tait, Euphemia	Bainsville, Ont.
Taylor, Helen H.	Montreal West.
*Viner, Bessie	Montreal.
Williams, Anna Louise S.	Westmount.
Williams, Hilda Catherine	
Willis, Helen Avis E.	Toronto, Ont.

FOURTH YEAR.

(*McGill College.*)

Atkins, Basil E.	Vancouver, B.C.
Barlow, Arthur	
Bieler, John H.	Westmount.
Bradbury, William J.	Bay Roberts, Nfld.
Brown, F. Ronald	Danville, P.Q.
Bruneau, Aime Sydney	Cornwall, Ont.
Buchanan, James Reginald	Kerwood, Ont.
Busby, Eldon Durward	
Common, Frank	Westmount.
Corbett, Percy E.	Fort Qu'Appelle, Sask.
Davison, Frank Cyril	Vancouver, B.C.
Dewey, George F.	Westmount.
Farthing, Hugh C.	Montreal.
Fisher, Arthur G. E.	Montreal.
Forster, David Stewart	Vancouver, B.C.
Gall, George Lockhart	Lachute, P.Q.
Gronin, Joseph	Montreal.
Harris, Edmund Dale	Montreal
Heaton, John C.	Westmount.
Henry, H. Donald	Montreal.
*Hodgson, Edwin	Hudson Heights, P.Q.
Honey, Howard P.	Abbotsford, P.Q.
Jeakins, John W.	Waterloo, P.Q.
Kirkpatrick, Earl A.B.	Vancouver, B.C.
Leavitt, Joseph	Montreal.
*McCormack, George J.	London, Eng.
McCrimmon, Kenneth Howard	Kincardine, Ont.
Mc Garry, Allan A.	Westmount.
MacLean, Kenneth	Strathburn, Ont.
*MacLeod, Donald	Ripley, Ont.
McLeod, William M.	Montreal.
*McVey, Robert W.	Glasgow, Scotland.
Matheson, Homer L.	Summerstown, Ont.
Miller, Iveson A.	Calgary, Alta.
Morgan, Henry W.	Montreal.
Morison, Charles K.	Ormstown, P.Q.
Nicholson, William C.	Westmount.
Penny, W. Stewart	Westmount.
Pound, Edward Harold	Montreal.

*Partial.

NAME.	HOME ADDRESS.
Reid, Hugh Simpson	Port Haney, B.C.
Reilley, Herschell E. (B.Sc. Course)	Shanley, Ont.
Silver, Benjamin	Brooklyn, N.Y.
Stevenson, Reginald B.	Shoal Lake, Man.
Stewart, John G.	Outremont, P.Q.
*Walsh, W. Allen	Montreal.
Williamson, Charles Oliver	Easton, Pa.
*Wilson, Robert James	Moffat, Scotland.
*Wilson, W. G. Arthur	Shawville, P.Q.

(*Royal Victoria College.*)

Armstrong, Jean D.	Ottawa, Ont.
Beattie, Hester Elizabeth	Victoria, B.C.
*Blackader, Isabel Hamilton	Montreal.
Bolton, Grace Alberta	Vancouver, B.C.
Bremmer, Jennie M.	Vancouver, B.C.
Cameron, Anne Watson	Sydney, N.S.
Duff, Dorothy	Montreal.
Hecht, Amelia	Westport, Ont.
Henderson, Edith	
Keenleyside, Alice Morgan	Vancouver, B.C.
Larivière, Rose de L.	Montreal.
Leonowens, Anna H.	Montreal.
*Lighthall, Alice M. S.	Westmount.
McCall, Helen Elizabeth	Montreal.
McIlwraith, Dorothy S.	Hamilton, Ont.
MacSween, Florence R.	Montreal.
Morison, Margaret I.	Ormstown, P.Q.
Mount, Winnifred B.	Westmount.
Munroe, Sadie Helena	Vancouver, B.C.
Reinhardt, Olive A.	Peterboro, Ont.
Ross, Leslie	Richmond, P.Q.
Schwengers, Ada Alice	Vancouver, B.C.
Shanly, Eleanor	Montreal.
Shearing, Helen A.	Montreal.
Trapp, Ethlyn	New Westminster, B.C.
Wilder, Kathleen M.	Westmount.

DEPARTMENT OF MUSIC.

PROCEEDING TO THE DEGREE OF MUS. BAC.

FIRST YEAR.

Armstrong, Dorothy L. F. Aird, Elsie Alice

SECOND YEAR.

Decorrevont, Florence A. C. Black, Hope Campbell
Rothschild, Dora

*Partial.

THIRD YEAR.

Mackenzie, Katrina
Wilson, Edith R.
O'Neill, Charles

(2). PROCEEDING TO THE DIPLOMA OF LICENTIATE IN MUSIC.

FIRST YEAR.

Lindsay, Marion L.
Plaw, Emma
Ferguson, Rosalind
Drysdale, Elsie Maud
Lister, Eugene V. T.
Holgate, Elizabeth
Potter, Mary Stewart

SECOND YEAR.

Lalumière, Thérèse

THIRD YEAR.

Jamieson, Ethel B.
Brophy, Minnie
Schmidt, Augusta C. M.
Panneton, Antoinette
Goldstein, Eva.

FACULTY OF APPLIED SCIENCE.

FIRST YEAR.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED
Alberga, Albert Miller	Montego Bay, Jamaica	Potsdam School, Jamaica
Allen, John Robert, Jr.	Ottawa	Studyvera, Ottawa.
Andrews, Frederick Harold	Quebec	Rothesay Collegiate.
Armstrong, Douglas Bond	Westmount	Westmount Academy.
Aspé, Suinaga José	Versalles, Mexico	Mexican University.
Authier, Henry V.	Montreal	Private Tuition.
Badgley, Francis C. C.	Ottawa	Ottawa Collegiate.
Balm, Charles Howard	Toronto	
Bath, Charles Lambert	Toronto	Trinity College School.
Bennett, William Herbert	New Glasgow, Que.	Stanstead College.
Bingley, Stanley Norman.	Sherborne, Eng.	Harrow School.
Bishop, John Murphy	Montreal	Lower Canada College.
Booth, Percy	Montreal	Montreal High School.
(2)Bouthillier, C. C.	Ste. Therese de Blainville, P.Q.	
Boyd, Benjamin Stuart	Shawbridge, Que.	Stanstead College.
Bradley, Preston	Trinidad, B.W.I.	Western Boys' R.C. Sch.
Bronson, Cecil Gordon	Ottawa	Studyvera, Ottawa.
Brophy, Andrew Warren	Montreal	Shortell's, Montreal.
Brophy, Maurice Jos.	Montreal	St. Patrick's, Montreal.
Brown, Arthur Alexander	Ottawa	Ottawa Collegiate.

*Partial.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
*Brown, Colin I.	Quebec	
Buckland, Arthur Leland	Way's Mills, Que.	Stanstead College.
Cameron, Ed. Parke	Ottawa	Ottawa Collegiate.
Campbell, Norman Gordon	Ottawa	Studyvera, Ottawa.
Carroll, George Francis	Montreal	Catholic High School.
(2)Chipman, Noel Ingersoll	Montreal	
Chisholm, Arthur Harold	Ottawa	Ottawa Collegiate.
Circé, J. Armand	Sherrington, P.Q.	Jacques Cartier Normal School.
Clark, Allan	Victoria, B.C.	Victoria High School.
Clark, Walter Donaghue	Massena, N.Y.	Massena High School.
Clough, Roy B.	Ayers Cliff, P.Q.	Stanstead College School.
Creery, Kenneth Andrew	Vancouver, B.C.	University School.
Cronyn, Richard Hume	London, Ont.	Ridley College .
(2)Crosley, C.	London, Eng.	Uppingham School.
Davis, James F.	Quebec	Private Tuition.
DeCew, Reginald Mark	Nelson, B.C.	Nelson High School.
De Paul, Marie Julius	Montreal	St. Patrick's School, Montreal.
DesBrisay, Eric Merrill	Vancouver, B.C.	King Edward School.
Deschamps, Albert, Jr.	Brockton, Mass.	Brockton High School.
(2)Despatie, J. Onesime	Montreal	Seminary of Joliet.
Deutsch, Gerald	Montreal	Private Tuition.
Donaghue, David James	Montreal	
Dorken, Herbert Walter	Westmount	Montreal High School.
Dubuc, Marcel	Montreal	Private Tuition.
Emery, Herbert James	Edmonton	Trinity College School.
Fawcett, Sydney Dawson	Ottawa	Ottawa Collegiate.
*Fergie, Thomas Francis	Montreal	Private Tuition.
*Fisher, Fred	Montreal	Westmount Academy.
(2)Forbes, Duncan Stuart	Vancouver, B.C.	
Forbes, Norman B.	London, Eng.	Shortell's Academy.
Fuger, Joseph Edward	Bay City, Mich.	Mt. St. Louis.
Fullerton, Alexander Frederick	Westmount	Private Tuition.
Garland, Arthur Hamilton	Ottawa, Ont.	Ottawa Collegiate.
Gass, Neville Archibald	Montreal	Tonbridge School, Kent, England.
Gatien, Charles Emile	Sherbrooke, P.Q.	St. Charles Seminary.
Gervers, Ronald Julius W.	Montreal	Private Tuition.
Gibbs, William Guyer	Buckingham, Que.	Ashbury College.
Gilman, William Chase	Masonville, Que.	Stanstead College.
Gordon, James Lindsay.	St. Lambert	Stanstead College.
Greenford, Joseph G.	Montreal	Bishop's College.
Hacker, Louis W.	Summerside, P.E.I.	
Hall, Terence Smythe	Lennoxville, P.Q.	Bishop's College School.
Hanna, Stirling Preston	Victoria, B.C.	Victoria High School.
Harris, Victor Bassett	Verdun	Verdun High School.
Harshaw, William Jacob	Cleveland, Ohio	Yale University.

*Partial.

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NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Hebden, Edward Raymond West	Montreal	Trinity College School.
Heney, John Bower L.	Ottawa, Ont.	Ashbury College.
Hiller, Edward George	Montreal	Mt. St. Louis Institute.
Hobart, George Maxwell	Lachine, Que.	Lachine Academy.
Hovey, Waldo Clyde	Sherbrooke, Que.	Sherbrooke High School.
Hunt, Walter George	Bury, Que.	
Hutchison, Bruce Caverhill	Montreal	Bishop's College School.
Jenckes, Kennan B.	Sherbrooke, Que.	Sherbrooke High School.
Johns, William Henry	Greenwood, B.C.	Lincoln High School.
Johnson, Lorne I.	Ottawa, Ont.	Ottawa Collegiate.
Karnes, Harry V.	Denver, Colo.	Staunton Military Acad.
Kelly, William Henry	Buckingham, Que.	Buckingham Academy.
Kelsch, Chester F.	Westmount	Lower Canada College.
Kent, Robert	Quebec, P.Q.	Mt. Allison Academy.
(2)Kilborn, Robert Charles	Montreal	Yonkers High School.
Klein, Bernard Albert	Westmount	
Knowles, James Melville	Quebec, P.Q.	Westmount Academy.
Laffan, Walter Sidney de Courcy	London, England	Oundle School, England
Laffoley, Lawrence Herbert	Montreal	Montreal High School.
Lanctot, John Jacques	Quebec, P.Q.	
Lang, Alfred Harding	Westmount	Westmount Academy.
*(2)Laurier, Robert	Montreal	
La Violette, Godefray	Montreal	Mt. St. Louis College.
Lawson, John Alexander	Copper Cliff, Ont.	Lincoln Preparatory.
LeGault, Albert	Smiths' Falls, Ont.	Smith's Falls Collegiate.
Lemay, Venance	Fort Russell, Wyom.	Cheyenne High School.
Lemoine, Albert F.	Montreal	Private Tuition.
(2)Leo, Louis Maitland	Westmount	Shortell's Academy.
Leslie, Eric Alexander	Westmount	Montreal High School.
Lindsay, Guy Adamson	Winnipeg, Man.	Manitoba College Sch.
(2)Lindsay, Stanley Bagg	Montreal	St. John's School.
Locock, Leicester	Sussex, England	Malvern College, Worcester, England
McEown, L. L.	Montreal	Manitoba University.
McFarlane, Maynard Deedes.	Westmount	Westmount Academy.
McIntosh, Ernest Donald	Carleton Place, Ont.	Carleton Place High Sch.
McIntyre, Gordon M.	Montreal	
Mackenzie, Alexander Wm.	Bedford, N.S.	
MacLachlan, Robert Cavan	Montreal	Buckingham Academy.
McLaren, Donald Frederick	Vancouver, B.C.	Westminster Hall.
MacLauchlan, Robert Henry	Calgary, Alta.	Prince of Wales College.
MacLean, Wm. Henry	Crapaud, P.E.I.	Prince of Wales College.
McLeod, George Donald	Montreal	
McNally, Harry James.	Berlin, Ont.	Galt Collegiate.
McNichol, Charles	Westmount	Wykeham House School.
McPhail, Donald Stuart	Jamaica, B.W.I.	Oundle, England.
MacPherson, Albert Dill	Montreal	Shortell's Academy.

*Partial.

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NAME.	HOME ADDRESS.	WHERE LAST EDUCATED
Maguire, Francis Joseph	Montreal	St. Patrick's School, Montreal.
Marquette, Hector	Montreal	Shortell's Academy.
Marrotte, Edgar Samuel	Westmount	Westmount Academy.
Mathewson, Kenneth	Montreal	Lower Canada College.
Miller, Louis Alfred	Montreal	Montreal High School.
Miner, George Denison	Granby, Que.	Granby High School.
*Mitchell, Wilfred Barnard	Lisbon, Portugal	
Moas, Baltasar	Havana, Cuba	
Mooney, Frank Melbourne, Jr.	Montreal	Wykeham High School.
Morin, Georges Henri	Quebec, P.Q.	Quebec Seminary.
Morris, William Hugo	Ottawa, Ont.	Ottawa College.
(2)Moulton, Vincent C.	Westmount	Westmount Academy.
Mucklow, Graham Fernie	Lancashire, England	Private Tuition.
Murphy, Jos. Gerard	Montreal	Catholic High School.
(2)Nehin, Frank O'Brian	Buffalo, N.Y.	St. Patrick's School.
Neilson, Stanley Alexander	Westmount	Westmount Academy.
Nesham, Lionel Charles	Torquay, England	Kingsbridge, England.
Ogilvy, Laurie Combe	Montreal	Westmount Academy.
O'Gorman, Cornelius Francis	Streetsville, Ont.	Upper Canada College.
Ord, Sidney Arthur	McAdam, N.B.	Private Tuition.
Parke, J. Scott	Montreal	Montreal High School.
Patterson, James F.	Montreal	Montreal High School.
(2)Peck, Brian		
Pelletier, Henry Burroughs	Montreal	Mt. St. Louis.
Perrault, Jean Julien	Montreal	Catholic High School.
Perrault, Réné	Montreal	Sacred Heart College.
Pick, Charles Herbert	Montreal	Montreal High School.
Pickard-Cambridge, Trenchard D.	Montreal	Berkhamsted.
*Poirier, John Louis	Montreal	Mt. St. Louis.
Popham, Clarke H.	Winnipeg, Man.	Central Collegiate.
Rainboth, Leonard	Ottawa, Ont.	Ottawa Collegiate.
Reddy, Eric Beresford Fleming	Montreal	Private Tuition.
Richardson, Samuel S.	Westmount	Westmount Academy.
Rittenhouse, Herbert W.	Westmount	Westmount Academy.
Roberton, Kenneth Baillie	Montreal	
Robertson, Andrew Murray, Jr.	Montreal	Montreal High School.
Robertson, Robert Ward Shepherd	Montreal	Crichton School.
Rosher, John Henry	Bedford, England	Private Tuition.
Roundwaite, Francis George	Cahore, Ont.	Morrisburg Collegiate.
Russell, Alex Charles	London, England	
(2)Russell, Allan H.	Renfrew, Ont.	Renfrew High School.
Rutherford, Archibald Bowman	Montreal	Montreal High School.
(2)Ryan, John	Montreal	St. Patrick's.
*Samuel, Cecil O.	Montreal	Private Tuition.
*Saucier, Theodore John	Montreal	Private Tuition.
Scott, Douglas Stewart	Montreal	
Seath, William Pringle	Montreal	Montreal High School.
*Shannon, Robert Eric	Bath, England	Monkton, Combe.

*Partial.

The figure (2), (3) or (4), prefixed to a name, indicates that the student takes a class in the corresponding year, as well as in that where the name is found.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Shrimpton, Dudley J.	Montreal, West	Westmount Academy.
Smith, David Whitney	Montreal	Westmount Academy.
Somers, Gordon Lindsay	Johnville, Que.	
Soper, Harold Warren	Ottawa, Ont.	Miss M. E. Cowan's Sch.
*Spencer, Rudolf Edgcome	London, England	
Sutherland, Victor Richardson	Victoria, B.C.	University School.
Sutherland, Walter Scroggie	Valleyfield, Que.	McGill University.
(2)Taylor, Alex. Stewart	Montreal	Shortell's Academy.
*Tees, Allan Roswell	Montreal	Montreal High School.
Templeton, Edwin Walters	Vancouver, B.C.	King Edward High Sch.
Thompson, Basil George	Montreal	Catholic High School.
Timmins, Jules Robert	Montreal	
Trapp, George Leonard	New Westminster, B.C.	Royal City High School.
Trudeau, Alphonse	Montreal	Montreal High School.
Tucker, Alexander Ewing	Palmetto Grove, Bermuda	Trinity College School.
Twinberrow, James Oswald	Tyne, England	St. Bees School, Cumberland, Eng.
Wallingford, George E.	Perkins Mills, P.Q.	Feller Institute.
Walter, Arthur William	Westmount	Westmount Academy.
(2)Waterous, Charles L.	Brantford, Ont.	St. Andrew's College.
Weldon, Leslie S. Smiley	Montreal	Montreal High School.
Wells, Eugene	Rock Island, Que.	Stanstead College School.
Whitaker, Ronald Robert	New Westminster, B.C.	Westminster High School
White, MacLeod	Sandon, B.C.	
Wickenden, Henri Robert	Bethel, Connecticut	Bethel High School.
Wilkins, John	Montreal	Montreal High School.
Wilkinson, Eyre Spenser		
Wilson, James M.	Lachine, P.Q.	Lachine Academy.
Windatt, Arthur Enderton	Winnipeg, Man.	St. John's College.
Wisse, William Horatius	Montreal	Montreal High School.
Wood, William Lawrence	Way's Mills, Que.	
(2)Woodruff, Bernard John	Ottawa, Ont.	Ottawa Collegiate Inst.
Zwicky, Everett Edward	Kaslo, B.C.	Kaslo High School.

SECOND YEAR.

Adelstein, Harry Mitchell	Montreal	Montreal High School.
Alberga, George Frederick	Montego Bay, Jamaica	Potsdam School.
Baker, Dennis	Lismacue, Ireland	Private Tuition.
Bangs, Raymond Gardner	Carleton Place, Ont.	Carleton Place H. S.
Bauset, Jules	Montreal	
Bone, Allan Turner	Calgary, Alta.	Western Canada College.
Bonhomme, Lionel	Papineauville, P.Q.	Ottawa University.
*(3)Booker, Harvey D.	Kenora, Ont.	Kenora High School.

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NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
*(2)Botero, Baltasar	Sonsoi, Columbia, South America	St. Ignatius College.
Bradley, Hilburn Nicholas	Calgary, Alta.	Calgary Coll. Inst.
Bremner, Douglas	Westmount	Montreal High School.
Buckley, Peter Burton	Geneva, Italy	St. Paul's School, London
Cameron, Charles Munnis	Sydney, N.S.	Sydney Academy.
*(2)Chalifour, Simon Joseph	Ottawa, Ont.	Crichton School.
Cole, Douglas Seaman	Ottawa, Ont.	Ottawa Coll. Inst.
Cooper, Albert	Brandon, Man.	Brandon College.
Crosley, Cecil	London, Eng.	Uppingham School.
Crutchfield, Howard	Huntingdon, P.Q.	Huntingdon Academy.
Darbyson, Allan Burney	Montreal	
Daubney, Harry Johnston	Ottawa, Ont.	Ottawa Coll. Inst.
Dawson, Heber William	Ottawa, Ont.	Trinity College School.
Douglas, George Vibert	Westmount	Westmount Academy.
*(2)Doyle, Samuel Thos.	Montreal	St. Patrick's School.
Duck, Charles William	Victoria, B.C.	
Fair, Robert McCamus	Stratford, Ont.	Peterboro Coll. Inst.
Ferguson, Allan Andrew	Quebec, P.Q.	Pictou Academy, N.S.
Ferrier, Alan	London, Eng.	
Fineberg, Joseph	Montreal	Montreal High School.
Forbes, Norman Bruce. (Arch)	London, Eng.	Shortell's Academy.
Forman, John F.	Montreal	
Fotheringham, John	Ottawa, Ont.	Ottawa Coll. Inst.
Francis Thomas Frederick	Salisbury, N.B.	Yarmouth Academy.
Freeland, John James	Montreal	Loyola College.
Fyon, Albert Leo (Arch)	Montreal	Comm. & Tech. H.S.
Gage, Victor Edward	Pearceton, P.Q.	Feller Institute.
*(3)Gass, Ronald Wright	Montreal	Rothesay Coll. School
Gibbs, Charles Richard	Carthage, N.Y.	West Carthage H.S.
Goddard, George Anson	Montreal	Montreal High School.
Guy, Richard William	Ottawa, Ont.	Ottawa Coll. Inst.
Harris, Pasker B.	Gore's Landing, Ont.	
Henson, Harold Gordon (Arch)	Lethbridge, Alta.	Private Tuition.
(1)Hight, William Russell	Newport, Vt.	Newport High School.
Hodgson, George Ritchie	Montreal	Montreal High School
Hovey, John Alonzo	Sherbrooke, P.Q.	Sherbrooke,H.S.
Hovey, Rex William	Sherbrooke, P.Q.	Sherbrooke H.S.
Johnson, Hammond	Charlottetown, P.E.I.	Prince of Wales College.
*(2)Kitchener, Henry Hamilton	Bermuda	Private Tuition.
Laddon, Isadore Machlin	Montreal	Montreal High School.
Laing, Murdoch McLeod (Arch)	Montreal	Montreal High School.
Lake, James Louis E.R.	St. John's, Antigua	Antigua Gram. School.
(3)LaMontagne, John M.	Montreal	

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NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Lamontagne, Yves	Montreal	Comm. & Tech. H.S.
Little, Edward Carruthers	Ottawa, Ont.	Ottawa Coll. Inst.
Loggie, Purves Primrose	Fredericton, N.B.	Univ. of New Brunswick
Loudon, E. W.	Montreal	
Ludington, William Horace	Westmount	
Lyons, Edward Leslie	Kingston, Jamaica	New College, Jamaica.
Macaulay, Douglas Lawson	Westmount	
McCall, James Darling	Montreal	Crichton School.
MacEwen, Ewen	Westmount	Westmount Academy.
*(2)McLean, John Reginald	Morenci, Arizona	Coll. School, Windsor, N.S.
McLeod, Archibald (Arch)	Montreal	Shortell's Academy.
Marcoux, George	Quebec, P.Q.	Laval University.
Mendelssohn, Nathan	Montreal	Y.M.C.A., Montreal.
Millar, Burton	Peterboro, Ont.	
Montgomery, Samuel Clifford	Winnipeg, Man.	
*(2)Morkill, Geoffrey Wm.	Lima, Peru	Bishop's College School.
Murray, Hareourt A.	New Glasgow, N.S.	
Nelson, Maxwell Stuart	Montreal	Comm. & Tech. H.S.
Ney, John Stuart	Vancouver, B.C.	
Ogilvie, William Edmond	Westlands, Scotland	Repton, England.
O'Shea, Daniel Wilfred	St. Vincent de Paul, P.Q.	Catholic H.S.
*(3)Paisley, J. Ernest H.	Ottawa, Ont.	St. Andrew's College.
Parsons, Lloyd Holman (Arch.)	Westmount	Lower Canada School.
Patterson, Alexander Ernest	Longueuil, P.Q.	
Pennock, William Britton	Ottawa, Ont.	Ottawa Coll. Inst.
Ray, Charles John Edward	Peterboro, Ont.	Peterboro Coll. Inst.
Robertson, John Louis A.	Montreal	Montreal High School.
Ross, George William	Westmount	Westmount Academy.
Roy, Joseph Ernest P.	Quebec, P.Q.	Quebec High School.
*(2)Sandison, William Ross	Winnipeg, Man.	Manitoba University.
Scantlebury, Reginald Avery	Vankleek Hill, Ont.	
*Schellens, Eugene Levering	Groton, Conn.	Norwich Academy.
*Scott, Harold Archibald	Ottawa, Ont.	Ottawa Coll. Inst.
Scott, Robert Allan (Arch.)	Valleyfield, P.Q.	Gault Institute.
Seale, Edgar McKeown	Montreal	Montreal High School.
Sloves, Moses	Montreal	Comm. & Tech, H. S.
Smith, William Henry	Owen Sound, Ont.	Owen Sound Coll. Inst.
Sparling, Eric Carleton	Granby, P.Q.	Granby H.S.
(1)Spratt, William Norman	Kingston, Jamaica	Potsdam School.
Sullivan, Jeremiah Joseph	Valleyfield, Que.	
(1)Sunderland, Marmaduke L.	Graffham, Eng.	Private Tuition.
Taylor, Alexander Stewart	Montreal	Shortell's Academy.
(3)Todd, M. Milne	Galt, Ont.	
(3)Tracy, Thomas Leonard	Vancouver, B.C.	
(1)Voligny, Louis Rodolphe	Montreal	Ottawa College.

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NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
(3)Walbank, W. McLea	Montreal	Ridley College
*(2)Wall, Albert Fraser	Montreal	Shortell's Academy.
Weir, William	Montreal	Y.M.C.A., Montreal.
Wickson, John Arthur (Arch.)	Winnipeg, Man.	Manitoba University.
Wilkins, Arthur Griffith	Ottawa, Ont.	Ottawa Coll. Inst.
Williams, Thomas Anwyl.	Ottawa, Ont.	Ottawa Coll. Inst.
Williscroft, George M.	Victoria, B.C.	Victoria, H.S.
Woolatt, David Herbert	Walkerville, Ont.	Windsor Coll. Inst.

THIRD YEAR

NAME.	HOME ADDRESS.
Allingham, R. Ralph	Woodstock, N.B.
Anglin, Wm. A. I. (Arch.)	St. John, N.B.
Angus, Roy F.	Regina, Sask.
Bain, James William	Montreal.
Barwick, Oliver A.	Montreal.
Bell-Irving, Robert	Vancouver, B.C.
Bignell, Hilary V.	Montreal.
Bissett, John Edwin	Vancouver, B.C.
Blight, James Seymour	Hillsboro, N.B.
Bone, John Turner	Calgary, Alta.
Boswell, Maxfield Lea	Victoria, P.E.I.
*(3)Brisbane, John S.	Westmount.
Bull, Wilford Edward	Winnipeg, Man.
Calder, C. Douglas	Westmount.
Cann, Percy	Yarmouth, N.S.
Cardinal, J. Emile	Montreal.
Carreau, Louis H.	St. Johns, P.Q.
Chalifoux, Lionel	St. Hyacinthe, P.Q.
Chambers, Hugh Dalford	New Glasgow, N.S.
Charleson, Donald Richard	Vancouver, B.C.
(1)Cockfield, William E.	Montreal.
Coke, Reginald Norman	Lyndhurst, B.W.I.
Coleman, Milton Thomas	Westmount.
Connors, Frederick Patrick	Montreal.
(1)(2)Constable, Kenneth Maxwell	Uppingham, England.
Coote, James A.	Oakville, Ont.
Cosgrave, Lawrence Moore	Toronto, Ont.
Creasor, John Alfred	Owen Sound, Ont.
Cronk, Francis Joseph	Montreal.
Cunningham, Andrew Irwin	Westmount.
Davies, James Frederick Blair	Hull, Que.
Dawson, Harvey A.	Montreal.
Day, Joseph Charles	Montreal.
Dempster, Arthur L.	Rossland, B.C.
Draper, George Collier	Montreal.
Duggan, Kenneth L.	Montreal.
*Egerton, Rowland Philip	Wrexham, N.Wales.

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NAME.	HOME ADDRESS.
Ewart, Kenneth Penicuik	Ottawa, South, Ont.
Fay, Leonard William	Knowlton, Que.
Fellows, J. Alex	Stellarton, N.S.
Ferguson, George Knowles	Moncton, N.B.
Flitton, Ralph Cyril	Victoria, B.C.
Fraser, Isaac Matheson	Pictou, N.S.
Fricker, Cecil Oscar	London, W., Eng.
Fullerton, James Thornton	Victoria, B.C.
Fyles, Lyndon Fulford	Abercorn, P.Q.
Garden, H. Mackie G.	Montreal.
Gardiner, Frank C.	Charlottetown, P.E.I.
Garrett, Eric Hanover	Montreal.
Garrow, Edwin Esslemont	Montreal.
Gentles, Allan S.	Westmount.
Gilmore, Arthur J.	Derby Line, Vt.
Glasmacher, Walter Augustus	Ottawa, Ont.
Goodman, Flavius Ivo C.	Erin Hall, Barbados.
Guignard, Ernest Augustus	Ottawa, Ont.
Hadley, Clifford	Montreal.
Hadley, Daniel James	Montreal.
Hague, Kennington H.S.	Montreal.
Hall, John Smythe	Montreal.
Harding, C. Howard	Westmount.
Harkom, John Frederick	Melbourne, P.Q.
*(3)Harrison, Austen St. B. (Arch.)	Beckenham, Eng.
Hay, Allan Keith	Ottawa, Ont.
Heap, Joseph Milne	Birkenhead, Eng.
Helmer, Alexis Hannum	Ottawa, Ont.
Henderson, Roy Grant	New Westminster, B.C.
Henry, Thomas Haliburton	Westmount.
Holland, Henry Donald	Leamington, Eng.
Horsey, Clifton Mawbank	Montreal.
Hughes, Hamilton Cleaver	Vancouver, B.C.
Hyams, Samuel	Montreal.
(2)Hyde, Walter C. (Arch.)	Montreal.
Jamieson, Robert Edwards	Ottawa, Ont.
Jaques, George E.	Montreal.
(2)Jerry, Hubert William	Plattsburg, N.Y.
Keeping, Kimball F.	Murray Harbor, P.E.I.
Kennedy, Harold Samuel	Ottawa, Ont.
Kennedy, Howard	Dunrobin, Ont.
Lauder, Lester E.	Westmount.
La Montagne, John M.	Montreal.
Lawrence, Alfred John	Outremont.
Lawson, Frank	Calgary, Alta.
Layne, Geoffrey F.	Penrith, Barbados.
Lionais, J. Edward	Montreal.
Lockhart, W. Stanley	Moncton, N.B.
Mabon, J. Bertram	Montreal.

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NAME.	HOME ADDRESS.
McDougall, James	Morenci, Arizona.
McFarlane, Blair Athol	Hamilton, Ont.
McLennan, W. Durie (Arch.)	Montreal.
MacLeod, Hector John	High River, Alta.
McMeekin, Ernest	Stonefield, P.Q.
McNaughton, Ira James	Chatham, N.B.
(2)McNicoll, David	Westmount.
Marshall, Melville Johnstone	McAdam Jct., N.B.
Martin, John Lawrence T.	Montreal.
*(3)Masson, William Grey	Ottawa, Ont.
Messervey, Harold Albert	Charlottetown, P.E.I.
Mifflen, Sydney Clarence	Greesnpond, Nfld.
*(3)Monat, Charles Oscar	Montreal.
Morgan, Neil Lyman	Montreal.
Morris, Frederick Jarvis	St. Regis Falls, N.Y.
(2)Morris, Harold Irwin	Winnipeg, Man.
Mullin, James W.	Barb, Ont.
Notman, Keith C.	Westmount.
O'Donnell, John Gerard	Port William, Ont.
Orkin, Edward	Westmount.
Ouimet, Réné	Montreal.
Page, John Albert	Brockville, Ont.
Parker, John Stewart	Tynemouth Creek, N.B.
Parkins, Frank Albert	Montreal.
*(3)Paterson, Harold Sutton	Ottawa, Ont.
Patterson, Arthur Logie	Westmount.
Perry, Arthur C.	Montreal.
Pitts, Clarence McLeod	Ottawa, Ont.
Powter, Arthur Lawrence	Westmount.
Reid, Edwin Ballantyne	Montreal.
Reid, James William	Riverside, N.B.
Ribadeneyra, Antonio	Guayaquil, S. America
Rickards, Arthur Traherne	London, England.
Ripley, Wilfred J.	Happan Station, N.S.
Robertson, James	Lachine Locks, P.Q.
Robertson, Randal Kilally	Hamilton, Ont.
Ross, Bruce	Ottawa, Ont.
Roy, Louis Philippe	Montreal.
Ruggles, Harry Lemoine	Bridgetown, N.S.
Ryley, Edmund G.	Montreal.
Sawers, B. L.	Vancouver, B.C.
Scott, Alexander Gordon	Montreal.
Scott, Norman Mackie	Ottawa, Ont.
Scott, William Douglas	Oxford, Eng.
Sherlock, Robert Hamilton	Lethbridge, Alta.
Skeete, Arthur Torrance	Bentley, Barbados.
*(4)Smith, Britton Oliver	Montreal.
Stanley, Harold Poole	Charlottetown, P.E.I.
(4)Stavely, Walter D.	Montreal.
Stavert, Reuben Ewart	Montreal.

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NAME.	HOME ADDRESS.
Stewart, George Lawrence	Winnipeg, Man.
Stone, Horace Gordon	Vancouver, B.C.
(4)Strathy, Ralph Lee A.	Montreal.
Story, Edmund Stanley	St. John's, Nfld.
Summerskill, John Henry	Montreal.
Suckling, Gerald Arthur	Westmount.
Sutherland, Ronald Douglas	Ottawa, Ont.
Taylor, Edward Roland	Victoria, B.C.
Taylor, George Melville	Ottawa, Ont.
Taylor-Bailey, Whitman	Westmount.
Thom, James Balfour	Westmount.
Traversy, Eric Esdale	Montreal.
Tyler, William Grant	Montreal, West.
Waldron, Clifford R.	East Clifton, P.Q.
Wilkes, F. Hilton (Arch.)	Brantford, Ont.
Williamson, Alexander D.	Montreal.
Wilmot, Lemuel Allan	Vancouver, B.C.
(4)Wilson, Calvin P.	Huntley, Ont.
Wilson, Wm. B.	Montreal.
Windeler, Henry Stanton	St. John's, Nfld.
Winter, F. Bassell	St. John, N.B.
Wood, James A.	Upper Melbourne, P.Q.

FOURTH YEAR.

Bailey, Philip E.	London, Eng.
Baker, Douglas Stanley	Kent, England.
Baker, Massy	Bamsha, Tipperary, Ire.
Baridon, Frederick W.	Westmount.
Barker, R. I. P.	Wreatham, Eng.
Berry, Robert C.	Montreal.
Boire, J Jules	Quebec, P.Q.
Bolan, Wm. M.	Montreal.
Burr, Arthur Vibert	Toronto, Ont.
Burrows, Horace L.	Hamilton, Ont.
Cameron, Alan Emerson	Fredericton, N.B.
(3)Campbell, Colin	Ottawa, Ont.
Campbell, Kenneth Mowatt	Frederickton, N.B.
Carson, John A.	Vancouver,B.C.
(3)Cassels, W. L.	Ottawa, Ont.
Chave, Elmer H.	Victoria, B.C.
Christie, John Edward	Lachute, P.Q.
Clarke, Atliee B.	Bear River, N.S.
Connolley, William J.	Cross Roads, Jamaica.
Crewdson, Eric	Milnthorpe, Eng.
Crossfield, John T. K.	Moorcroft, Eng.
Cunningham, Stanley H.	Montreal.
Darling, Gordon	Boyerbourg, P.Q.
Davidson, William Joseph	Westmount.
Dempster, Reginald C.	Rossland, B.C..
Dibblee, E. W.	Moore's Mills, N.B.

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NAME.	HOME ADDRESS.
Dodd, George Saville	Newport, Jamaica.
Donald, James R., B.A.	Montreal.
Duffield, Colin M.	London, Ont.
Duffy, Robb R.	Hillsborough, N.B.
Dufresne, Alphonse	Montreal.
(3)Dunn, James Lewis	Montreal.
Eardley-Wilmot, Trevor	Perth, Ont.
Eliasoph, Joseph E.	Quebec, P.Q.
Elliott, Fergus E.	Montreal.
Fitzgerald, Edward	Peterboro, Ont.
Gall, Arthur	Montreal.
Galloway, Charles Campbell	Vancouver, B.C.
Garrett, Harry L.	Sheffield Mills Sta., N.S.
Gohier, J. Ernest	St. Laurent, P.Q.
Gougeon, Hugh D.	Saskatoon, Sask.
Grafftey, W. Arthur	Westmount.
Graham, Ewen J.	Montreal.
Hamer, Thurston Moseley	Mexico City, Mexico.
Hamilton, Geoffrey H.	Hollyholm, Southampton, England.
Hample, Carl Samuel	Winnipeg, Man.
Hanley, Alphonsus E.	Montreal.
Harvey, Ernest R.	Lyndhurst, Ont.
Hebden, John B.	Montreal.
Hugh-Jones, Evan Bonnor	Wrexham, Wales.
Hull, Harold Louis	Victoria, Transvaal, S. Africa.
Irwin, Gifford M.	Vancouver, B.C.
Jackson, Frederick S.	Nelspoort, S. Africa.
Joseph, Kenneth de S.	Quebec, P.Q.
Kavanagh, Walter J.	Montreal.
Kennedy, Harold Samuel	Ottawa, Ont.
King, Edmund Dewitt	Chipman, N.B.
Kirby, Thomas H.	Winnipeg, Man.
Lawrence, John F.	Hantsport, N.S.
Lawrence, William H.	Watford, Ont.
*Legris, Charles E.	Arctic, R.I.
Lewis, John Travers	Ottawa, Ont.
Lipsey, Joseph	Montreal.
*Lovett, Eric A.	Montreal.
Lyche, Norman E.	Ucluelet, B.C.
Lynch, James A.	Old Navy, Barbados.
(3)Lynch, T. Leo.	Fredericton, N.B.
Lyster, Horace M.	Kirkdale, P.Q.
McConkey, Bertram	Guelph, Ont.
McDonald, Louis M., B.A. (Laval)	St. John, N.B.
McDougall, Charles G.	Moncton, N.B.
McDougall, R. J.	Vankleek Hill, Ont.
Mackay, Arthur H.	Sydney, N.S.

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NAME.	HOME ADDRESS.
McEvenue, St. Clair	London, England.
McFee, M. C. Coll.	Montreal.
*McLeod, C. Kirkland	Montreal.
MacRae, William A.	Montreal.
Mais, Herbert R.	Kingston, Jamaica.
Mather, Richard Henry	Ottawa, Ont.
Matheson, Walter	Charlottetown, P.E.I.
(3)Mathewson, Samuel J.	Montreal.
Mitchell, William G.	Port Hope, Ont.
Morrow, Thos. McL.	St. John, N.B.
Murphy, Stephen J.	Montreal.
Murray, Charles Ivan	Brockville, Ont.
Paddon, H. S.	St. John's, Nfld.
Page, Sidney Maurice	Lydgate, N.S.
Pickard, Kenneth S.	Sackville, N.B.
Pilcher, Edward E. I.	Oxford, Eng.
Poissant, Onesime Emile	Montreal.
Pullen, John	Westmount.
Reid, Hugh Simpson	Port Haney, B.C.
Rennoldson, David B.	Westmount.
Roche, Ivor F.	Montreal.
Ryan, Charles C.	Sackville, N.B.
Sargent, Albert E.	Montreal.
*(4)Skelton, Philip H.	Montreal.
Starke, Henry MacDermott	Rochester, N.Y.
Tait, Irving R.	Montreal.
Thompson, Geoffrey	Weybridge, Surrey, Eng.
Thompson, George H.	Oxford, N.S.
Traversy, Valmore, I.	Montrela.
*(4)Turnbull, Alan	Hamilton, Ont.
Vallance, Henry Walter	Hamilton, Ont.
Webb, Charles Harry	London, Eng.
Weir, James	Saskatoon, Sask.
Wilson, William J.	Ottawa, Ont.
Wright, Walter G.	London, Ont.

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FACULTY OF MEDICINE.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
	FIRST YEAR.	
†Baby, Henry	Chatham, Ont.	Chatham Coll. Inst.
Bachand, J. E.	Plattsburg, N.Y.	Joliette, Que.
Bell, J. A. M.	Teeterville, Ont.	Tillsonburg High School.
Bissember, A.	Berbice, Br. Guiana.	Regent St. Roman Coll.
Bissett, G. W.	Vancouver, Isle. B.C.	
Boucher, W.	Woonsocket, R. I.	St. Mary's College.
†Bradley, E. R.	Trinidad, B.W.I.	Western Boys' R.C. College.
Brodie, A. W.	Smith's Falls, Ont.	
Brown, E. C.	Montreal	Montreal High School.
Brown, J. F. L.	Middle Southampton, N.B.	Prov. Normal School.
Brown, J. S.	Quebec, P.Q.	Quebec High School.
Browne, J. C.	Westmount	
*Busby, E. M.	Vancouver, B.C	Vancouver High School.
Cahalan, R. E.	Wyandotte, Mich.	University of Detroit.
Cahanna, B. L.	Montreal	Montreal High School.
*Cameron, G.	Charlottetown, P.E.I.	Prince of Wales Coll.
Chisholm, A. N.	Port Hastings	Cape Briton.
Church, E. B.	Montreal	Lachute Academy.
Clarke, H. St. G.	St. John, N.B.	St. Joseph's University.
Cochrane, W. J.	Victoria, B.C.	Victoria High School.
Coughlin, F. J.	Montreal	Shortell's Academy.
†Coulson, R. B. M.	Westmount	Shortell's Academy.
Craig, Edward	North Gower, Ont.	North Gower High Sch.
†Cross, G. B.	Trinity, Nfld.	Private Tuition.
Desaulniers, G. E. D.	Windsor, Mills, Que.	
DesBrisay, H. A.	Vancouver, B.C.	King Edward High Sch.
Desparois, Albert	Montreal	St. Paul's Academy.
*Donkin, C. A.	Amherst, N.S.	Amherst High School.
Elkington, E. H. W.	Duncan, B.C.	Victoria High School.
Falls, F. N.	Ottawa, Ont.	Dier-Ewing Schools.
Ferguson, W. E.	South Edmonton	Pictou Academy.
*Finklestein, M. P.	Montreal.	
Fortier, G. H.	Montreal	
Fraser, Donald	Stratford, Ont.	
Gareau, U. J.	Ottawa, Ont.	
Gillis, A. F.	Miscouche, P.E.I.	
Gillmor, H. M.	St. George, N.B.	
Gokey, H. L.	South Hammond, N.Y.	Ogdensburg Free Acade.
Grant, K. G.	Montreal	
Greaves, E. M.	Montreal	
*Grifflith, H. R.		
†Hall, Percy	New Amsterdam, Br. Guiana	

†Partial.
*Double Course.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Halpenny, W.	Kinburn, Ont.	Arnprior High School.
Hamilton, A. P. C.	Victoria, B.C.	Victoria College.
†Harper, J. W.	St. John's, Antigua, B.W.I.	Mount St. Louis.
†Henry, C. B.	Halifax, N.S.	Private Tuition.
Hooper, J. A. V.	Ottawa, Ont.	Studyvera.
Hunter, T. S.	Vancouver, B.C.	Tutorial College.
Hunter, W. A.	Huntingdon, Que.	Huntingdon, Que.
Johnson, F. A.	Ohsweken, Ont.	Caledonia High School.
Laing, J. R.	Westmount	Westmount Academy.
Lalande, E.	Ottawa, Ont.	Ottawa College.
†Lamb, A. S.	Ballarat, Victoria, Australia	Springfield College, Springfield, Mass.
Lapointe, P.	Ottawa	La Salle Academy.
Lawrence, R. G.	Revelstoke, B.C.	Revelstoke.
Leahy, Gordon	Franklin Centre, Que.	St. Laurent College.
LeBel, M. W., B.A.	Ottawa, Ont.	Academie La Salle.
*LeMay, A.		
†Lortie, A. C.	Montreal	Private Tuition.
Lowe, H. H.	Ashton Station, Ont.	Carleton Place High School.
Lunney, E. W.	St. John, N.B.	St. John High School.
*McArthur, R. A.		
*MacKenzie, J. W.	Charlottetown, P.E.I.	Prince of Wales College.
MacTavish, C. R.	Van Camp, Ont.	Kemptville High School.
McCreary, S. R.	Belleville, Ont.	Belleville High School.
McDiarmid, F. C.	Carleton Place, Ont.	Carleton Place High Sch.
McDonald, John	Stratford, Ont.	Stratford Coll. Institute.
McGrath, B. M.	St. John's, Nfld.	King's Cove High Sch.
McGregor, A. F.	New Glasgow, N.S.	Dalhousie.
McGregor, T. D.	Schreiber, Ont.	
McIsaac. W, F.	Ottawa, Ont.	Ottawa Collegiate Inst.
McMurtry, G. J.	Marathon, Ont.	Arnprior, Ont.
Marsh, O. V.	St. Mary, Jamaica	Dominion Business Coll., Toronto
Matthews, L. M.	Port, Arthur	
Miller, F. G.	Owen Sound, Ont.	Owen Sound Collegiate.
Montgomery, L. C.	New Richmond, Que.	St. Andrew's, College.
Moore, J. D.	Victoria, B.C.	Victoria College.
†Murtagh, A. P.	Ottawa, Ont.	Ottawa College.
Newhook, W. H.	Montreal	Mt. Allison.
Nugent, J. R., B.A.	St. John, N.B.	St. Joseph's.
O'Reilly, J. B.	St. John's, Nfld.	St. Bonaventure's Coll.
Parsons, W. S.	Montreal	Montreal High School.
†Patterson, P. H.	Montreal	King Edward High Sch.
†Pearce, W. N.	Brantford, Ont.	Brantford Coll. Ins.
Perez, T. E.	San Domingo, W.I.	Mt. Allison Academy.
Phillips, G. G.	Cornwall, Ont.	
†Renaud, M. A.	Ottawa, Ont.	Ottawa College.
*Richardson, T. M.	Balderson, Ont.	Perth Collegate Inst.

†Partial.
*Double Course.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Ritchie, N. R.	Aylmer, Que.	Studyvera.
Robinson, J. D.	Saskatoon, Sask.	Private Tuition.
Rogers, E. E.	Edmonton, Alta.	Vancouver High School.
Scully, F. J.	St. John, N.B.	St. John High School.
Skinner, B. W.	Weston, N.S.	Weston.
†Sinclair, E. J.	Jamaica, B.W.I.	Jamaica College.
*Stewart, C. J.		
Stewart, John Howard	Winnipeg, Man.	
Stoughton, D. H.	Hartford, Conn.	Notre Dame University.
*Struthers, R. R.	Sudbury, Ont.	
*Stuart, R. J.	Woodstock, N.B.	
Sullivan, C. M.		
†Swancesky, H. P.	New Westminster, B.C.	Columbian College.
Tennant, P. S.	Vernon, B.C.	Vernon High School.
*Tinling, C. B.		
†Walters, L. J.	Ottawa, Ont.	Ottawa Collegiate.
Warburton, W. E.	Charlottetown, P.E.I.	Prince of Wales College.
†Warren, J. R.		
*Warshawsky, N.		
Whitley, H. T. C.	Ottawa, Ont.	St. Alban's.
Wright, H. S.	Upper Southampton, N.B.	Normal School of New Brunswick.

DENTAL STUDENTS.

Barr, C. H.	Montreal	Brock Collegiate Inst.
Halperin, H.	Montreal	Montreal High School.
Jenks, A. N.	Coaticook, Que.	McMaster University.
MacDonald, F. J.	Truro, N.S.	Common Schools, Truro.
McCallum, R. J.	Apple Hill, Ont.	Williamstown.
O'Shaughnesssy, J. F.	Montreal	St. Patrick's.
Parks, A. G.	Danville, Que.	Mt. St. Louis College.
Pearson, H. H.	Montreal	Shortell's Academy.
Schachter, Samuel	Montreal	
Silver, P.H.	Westmount	Montreal High School.
Sproul, G. A.	Chatham, N.B.	St. Thomas College.
†Taylor, A. C.	Belleville, Ont.	Upper Canada College.

SECOND YEAR.

Abell, Murray Clement	Bayham, Ont.	Aylmer Coll., Inst.
Affleck, John Ernest	Chellwood, Sask.	Arnprior High School.
Anderson, Charles Magee	Ottawa, Ont.	Ottawa Coll. Institute.
Baldwin, Sidney George	Vancouver, B.C.	Vancouver H.S.
Barrett, Harry Alfred	Vancouver B.C.	Vancouver H.S.
Bertram, James Knowles	Dundas, Ont.	Dundas H.S.
Brown, Bryce Alexander	Cornwall, Ont.	Cornwall H.S.
Burrows, G. C.		
Campbell, P. Smyth, B.A.	Port Hood	Port Hood Academy.
Church, C. K.		

†Partial.
*Double Course.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Cleveland, Henry Ross ... (Dentistry)	Montreal	Montreal High School.
Conover, Kelcey I.	Montreal	Yarmouth Academy.
Couture, Ernest	Hull, P.Q.	Ottawa College.
Cunnane, F. J.	Meriden, Conn.	
Dewar, Gordon Campbell, (Dentistry)	Black Cape, P.Q.	Mt. Allison Academy.
Dunne, G. P.	Ottawa, Ont.	
Fineberg, Moe Newton, (Dentistry)	Montreal	Montreal High School.
Gall, G. L.	Montreal	
Goldblatt, Harry	Montreal	
Goldbloom, A.	Montreal	
Greenspoon, Esau A.	Hawkesbury, Ont.	Hawkesbury H.S.
Gross, Louis	Montreal	Montreal High School.
Gullison, Frederick Eugene	Bear River, N.S.	Horton Coll. Academy.
Hartman, Louis John	Alexandria Bay, N.Y.	Alexandria Bay H.S.
Hastinga R, C.,	Malone, N.Y.	
Haszard, John Francis	Charlottetown, P.E.I.	Prince of Wales College.
Hewitt, Clarence Frederick (Dentistry)	Montreal	Shortell's Academy.
Jacobs, Abraham T.	Montreal	Private Tuition.
Jost, Harold Tremaine, B.A. (Mt. Allison)	Guysboro, N.S.	Mt. Allison College.
Kendall, Carson James	Ottawa, Ont.	Ottawa Coll. Inst.
Kennedy, G. L. D.	Ottawa, Ont.	
Kinney, Burton O.	Florenceville, N.B.	Prov. Normal Sch., N.B.
Larose, Armand E.	Frelighsburg, P.Q.	Private Tuition.
Lefebvre, Osias J., (Dentistry)	Grenville, P.Q.	Ottawa College.
Leavitt, J.		
Lowry, W. C.		
Lyons, G. A.		
McInerney, D. C.		
McCaffery, Thomas Francis	Montreal	Shortell's Academy.
McCusker, Emmett Andrew	Regina, Sask.	
McDonald, Donald D. (Dentistry)	Greenfield, Ont.	Alexandria, H. S.
McEwen, Herbert Bruce	New Westminster, B.C.	New Westminster H. S.
McInerney, D. C.		
McKay, Donald Russell, (Dentistry)	Montreal	Sherbrooke H. S.
MacPherson, John James	Port Daniel West P.Q.	Bishop's College.
Mack, Harold James.	Cornwall, Ont.	Cornwall H. S.
Marlatt, Charles Augustus	Waterford, Ont.	Waterford H. S.
Mars, John Francis.	Ansonia, Conn.	Holy Cross College.
Mendel, Frank (Dentistry)	Montreal	Y.M.C.A., Montreal.
Metcalfe, McColl.	Vankleek Hill, Ont.	Private Tuition.
Miller, William Howard	Victoria, B.C.	Victoria College.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Molleur, Charles	Montreal	
Myers, J. S., M.D	Jamaica, B.W.I.	
Newsam, Arthur Roland	Bridgetown, Barbados	Harrison College.
Oliver, Robert	East Delta, B.C.	Private Tuition.
Ord, William E	McAdam Jct., N.B.	Rothesay Collegiate.
O'Regan, John A	St. John, N.B	St. John H. S.
Owens, Harold Francis	Bridgeport, Conn.	Bridgeport H. S.
Paine, Henry George C	Hant's Harbour, Nfld.	Mt. Allison University.
Pedley, F. G		
Pickup, William Alfred, B. A. (Mt. Allison)	Granville Ferry, N.S.	Mt. Allison University.
Price, Reginald Francis	Skeena River, B.C.	Unive.sity Sch., Victoria.
Reid, Loudon Corsan	North Bay, Ont.	North Bay H. S.
Roberts, G. W	Ottawa, Ont.	
Roman, C. F	Bay City, Mich	
Sacksner, M. H	Montreal	
Saunders, F. W. (Dentistry)	Bedford, P.Q	
Scott, W. E	Westmount	
Seme, Ponquela L	Natal, S. Africa	Benedict Institute.
Skeete, Harold Edward	Christ Church, Barbados	Harrison College.
Stevens, William John	Chellwood, Sask.	Arnprior H. S.
Stevenson, Frank White	St. John, N.B	
Stewart, Louis Arthur S	Aylmer East, P.Q.	Granby H. S.
Sullivan, Willis Edmund	Biddeford, Me	Biddeford H. S.
Titleman, Nathan (Dentistry)	Montreal	Y.M.C.A., Montreal.
Walsh, James Wilbert	Parrsboro, N.S.	St. Francis Xavier Coll.
Wienke, Charles Edward	Pembroke, Ont.	Pembroke H. S.
Wolff, Thomas C., B.L., (Laval)	Montreal	Loyola College.
Woodward, W		

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THIRD YEAR.

NAME.	HOME ADDRESS.
Anderson, George C	New York.
Anton, Duncan Lumsden Stalker	Montreal.
Arnott, Charles Albert	Nelson, B.C.
Baby, George Raymond	Hamilton, Ont.
Bayne, Archibald Roy	Bridgetown, Barbadoes.
Belanger, Philippe	Ottawa, Ont.
Bercovitch, Lyon (Dentistry)	Montreal.
Browne, Wm. Alfred S.	Kingston, Jamaica.
Chapin, Claude E	Philadelphia, Pa.
Charters, Goldwin Earl	Coquitlam, B.C.
Conroy, Herbert J	Peterborough, Ont.
Demuth, Otto	Grand Forks, B.C.
Donnelly, Joseph M	St. John, N.B.
Driver, Harold Vincent (Dentistry)	Montreal.
Eberts, Harold F. H	Victoria, B.C.

NAME.	HOME ADDRESS.
Elliott, Raymond E.	Rochester, N.Y.
Evans, George Gordon	Vancouver, B.C.
Farley, Olin Everett	Lowell, Mass.
Fitzpatrick, Edward J.	Meriden, Conn.
Griffith, Gerald T., B.A., (Laval)	Sherbrooke, P.Q.
Hodge, George E.	Cornwall, Ont.
Hyndman, Alonzo Bowen	Merrickville, Ont.
Jacobs, Joseph H., B.A.	Caughnawaga, P.Q.
Kean, Cecil Darling	St. John's, Nfld.
Knoll, John J.	Daysland, Alta.
Laing, George Frederick	Windsor, Ont.
Leeson, Lavell Hall	Vancouver, B.C.
Legris, Louis J. A.	Louiseville, P.Q.
Lipsey, Reuben H. (Dentistry)	Montreal.
MacCallum, Linus M., (Dentistry)	Charlemange, P.Q.
McClelland, Alonzo Wright, (Dentistry)	Cantley, P.Q.
McCormack, A. C.	Renfrew, Ont.
McLean, W. J.	Perth, Ont.
MacNaughton, Benjamin F.	Salisbury, N.B.
Malone, James M. F.	Three Rivers, P.Q.
Mann, Arthur H.	Olds, Alta.
Martin, Arthur John	Ottawa, Ont.
Martin, J. Herman	Berlin, Ont.
Massiah, Hallam Guy	St. Lucy, Barbados.
Mingie, Walter J. E.	Montreal.
Moffatt, H. L.	Rialto, Calif.
Neilson, Henry Kenneth	Arnprior, Ont.
Pelletier, Albert, (Dentistry)	Montreal.
Ramsay, J. D.	Montreal.
Redman, Rupert C.	Hastings, Barbados.
Smith, Charles Emerson	Chesterville, Ont.
Smith, Lee	Vancouver, B.C.
Tanney, Ansel Meredith J.	Iroquois, Ont.
Templeman, William	St. John's, Nfld.
Urquhart, James A.	Revelstoke, B.C.
Walcott, Francis Sharpe	St. Michael, Barbados.
Walsh, Cecil Owen	Canso, N.S.
Wert, Harold Clifford	Avonmore, Ont.
West, J. Henson	Moncton, N.B.
Wilkes, A. Burton	Brantford, Ont.
Wilson, R. D.	Hull, Iowa.

FOURTH YEAR.

Argue, Alan F.	Carp, Ont.
Atkinson, Walter S.	Mansfield, Ohio.
Barclay, Douglas J.	New Westminster, B.C.
Bayne, Henry D.	St. Michael, Barbados.
Benning, Charles H. P. G.	Montreal.
Brown, Walter A.	Moncton, N.B.
Cheney, H. H.	Monticello, Me.
Cleveland, Donald E. H.	Victoria, B.C.
Convery, Ernest B.	Montreal West.
Couillard, J. Albert, B.A.	Ottawa, Ont.

NAME.	HOME ADDRESS.
Coy, Filmer E.	Vancouver, B.C.
Dalpé, Willie G.	Montreal.
Daw, William F.	Bay Roberts, Nfld.
Denny, James P.	Georgetown, B. Guiana.
Dover Harry	Aylwin, P.Q.
Fillmore, Millard J.	Advocate Harb,. N.S.
Fisher, Arthur M.	Woodstock, N.B.
Fleet, George A.	Montreal.
Gallagher, Joseph F.	Bangor, Me.
Gardiner, Egbert	London, Ont.
Gold, Maxwell, (Dent.)	Montreal.
Grant, William J.	Georgetown, P.E.I.
Gross, Harry S. (Dent.)	Montreal.
Hartin, David	Nelson, B.C..
Hirshberg, Isadore B.	Bay City, Mich.
Hutson, Lionel C.	White Park, Barbados.
Illievitz, Abraham B.	Montreal.
Jewett, Marcus L.	Cent. Keswick Ridge, N.B.
Johnston, Curtis D.	St. Elizabeth, Jamaica.
Jones, Arthur L.	Victoria, B.C.
Jones, B. L.	Sprague, Washington.
Joyce, Cecil R.	Woodstock, Ont.
King, Alfred E.	Waltham, Mass.
Lee, James C.	Quebec, P.Q.
Lennie, Theodore H.	N. Westminster, B.C.
Luby, Thomas J.	Meriden, Conn.
Lundon, Charles T.	Canterbury, N.B.
McCarroll, Francis L.	Arthur, Ont.
MacIntosh, Aden F.	Dundela, Ont.
MacKenzie, Henry H.	N. Westminster, B.C.
McLeod, Alexander	Bayfield, Ont.
Mason, Edward H.	Providence, R. I.
Melhado, Gerald C.	Old Harbour, Jamaica.
Mendel, David L.	Montreal.
Mewburn, Frank H. H., B.A.	Lethbridge, Alta.
Moore, William A.	Kaslo, B.C.
Morgan, C. R. L.	
Morris, Ernest M., A.B.	Fall River, Mass.
Morrison, D. Arnold	Maxville, Ont.
Murphy, E. V., A.B. (Holy Cross)	Fall River, Mass.
Mustard, Hugh R.	Victoria, B.C.
Pearce, L. G.	Brantford, Ont.
Peck, J. W.	Seaforth, Ont.
Phelps, F. Learn	Westmount.
Pollock, John M.	Berwick, Ont.
Powles, Clarence F. C.	Montreal.
Rankin, Ramsay D.	Stratford, Ont.
Robbins, C. Douglas	Yarmouth, N.S.
Roberts, Lawrence H.	Ottawa East, Ont.
Rogers, Keith F.	Yarmouth, N.S.
Ross, Albert	Blue Mountains, N.S.
Ruddick, William W.	St. John, N.B.
Ryan, Edward J.	Fairfield, Me.
Sahler, S. LeRoy	Kingston, N.Y.

NAME.	HOME ADDRESS.
Scott, W. Clifford	Ottawa, Ont.
Sharp, Albert D.	Summerside, P.E.I.
Smith, Charles H. V.	Valleyfield, Que.
Smyth, Phillip P.	Toronto, Ont.
Solomon, Arthur S. (Dent.)	Montreal.
Sproul, Melville	Martintown, Ont.
Stewart, Robert Cameron, B.Sc.	Quebec, P.Q.
Taylor, Walter F.	Charlottetown, P.E.I.
Tidmarsh, F. Wendell	Charlottetown, P.E.I.
Waterson, Douglas, B.A.	Westmount.
Wathen, James M. (Dent.)	Harcourt, N.B.
Wickham, John C., B.A.	St. Lambert, P.Q.
Wiley, David E.	Andover, N.B.
Wilson, T. G.	Wingham, Ont.
Windeler, Eric C. H.	Hazel Hill, N.S.
Wright, Henry P., B.A. (Bishop's)	Ottawa, Ont.

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FIFTH YEAR.

Atkinson, J. Hedley	Mansfield, Ohio.
Baird, Frederick S.	Bay City, Mich.
Beaton, Malcolm	Caledonia, P.E.I.
Beaudry, Joseph H.	Bridgeport, Conn.
Bilodeau, Joseph P.	New Westminster, B.C.
Brown, Norman	New Westminster, B.C.
Bruneau, I. Edgar, B.A.	Cornwall, Ont.
Busteed, Daniel F.	Vancouver, B.C.
Clark, Lewis E.	Vancouver, B.C.
Crombie, David W.	London, Ont.
Crowdy, Charles T.	St. John's, Nfld.
Cruikshank, W. D.	Hamilton, Ont.
Cumming, Herbert E.	Russell, Ont.
Cumming, John	Winnipeg, Man.
DeGarmo, Phillip W.	Kingston, N.Y.
Delahey, Allan L.	Pembroke, Ont.
Dixon, Howard C., B.A.	Maple Creek, Sask.
Falardeau, A.	Hull, P.Q.
Forbes, C. Alexander	Bonavista, Nfld.
Geldert, George M.	Windsor, N.S.
Gillis, Raymond A. D., B.A. (Laval & Oxford)	Summerside, P.E.I.
Gowdey, William C.	St. Michael, Barbados.
Grundy, Gordon M.	Long Beach, Cal.
Henderson, Arthur T.	Brown's Town, Jamaica.
Hutton, Willis A.	Lachine, P.Q.
Jones, Thomas A.	Georgetown, B. Guiana.
Kirkland, Archibald S.	New Westminster, B.C.
Krolik, Melville Z	Winnipeg, Man.
Lennox, Thomas H.	Fort Qu'Appelle, Sask.
Levine, Edgar C.	Montreal.
MacDermot, Hugh E.	Montreal.
McDiarmid, James S.	Ingersoll, Ont.
McGibbon, Walter J.	Chateauguay, N.Y.
McIntyre, George D.	Avonmore, Ont.
Mackay, Albert A.	Montreal.

NAME.	HOME ADDRESS.
Malloch, T. Archibald, B.A. (Queen's)	Hamilton, Ont.
Malone, Reginald H.	St. John's, B.W.I.
Meeker, Jay E.	Malone, N.Y.
Morris, Wesley G.	Regina, Sask.
Munroe, Finlay	Maxville, Ont.
Munroe, J. Garfield	Woodstock, Ont.
Nase, Philip, B.A. (Mt. Allison)	St. John, N.B.
O'Donnell, John E.	Fort William, Ont.
Parker, Frederick D.	Wolfville, N.S.
Phelan, George W.	Ash Point, Maine.
Phillips, J. Gordon	Forest, Ont.
Purdy, Walter T., B.A.	Amherst, N.S.
Reeves, Charles W.	Atlanta, Ga.
Robertson, Russell B.	Vancouver, B.C.
Robson, Charles H.	New Westminster, B.C.
Ross, S. Graham, B.A.	Montreal.
Scobie, T. J.	Kars, Ont.
Segal, Jake	Montreal.
Smith, J. Arthur	New Westminster, B.C.
Telford, James L.	Vancouver, B.C.
Thompson, Allen Edgar	Coaticook, P.Q.
Wall, James T.	Vancouver, B.C.
Williams, William E.	Mount Pleasant, P.E.I.
York, Heward S.	Waterford, Ont.

FACULTY OF LAW.

FIRST YEAR.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Audette, George Arthur	Ottawa	St. Mary's College.
*Babcock, Henry Hutchinson	Montreal	
Beaudoin, Pierre Arsene	Montreal	Laval.
*Boltuck, Isidore Wilfred	Montreal	Montreal High School.
Budyk, Joseph Alter, B.A.	Montreal	
Cameron, Norman Scott	Winchester, Ont.	Studyvera.
Cusson, Paul Achilles	Montreal	de Kermenios.
*Demers, Joseph Victor	St. John's, P.Q.	de Kermenios.
Dequoy, Fortunat	Alverno, Mich.	L'Assomption.
*Dupuis, Vincent	St. Philippe, Que.	
*Fairbanks, Abram	Montreal	Hunter's Academy.
Houle, J. A. Armand	Montreal	Terrebonne College.
Howard, Wilbert Harvard	Montreal	Montreal High School.
Kerry, John, B.A.	Montreal	Montreal High School
Kert, Isaac, B.A.	Montreal	Montreal High School.
*Lamb, Charles Ernest	Ballarat, Australia	Springfield College.
*Lavutt, Louis	Montreal	Hunter's Academy.
Legault, Augustin	St. Hermas, Que.	J. C. Norman School.

*Partial.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
*McDonald, Daniel E.	Montreal	Brookline High School, Brookline, Mass.
McInnes, Thomas Robert Loftus	Vancouver, B.C.	Vancouver High School.
Mignault, Gustave	Montreal	Seminaire de Ste. Therese
Muhlstock, Abraham Wilfred, B.A.	Quebec, P.Q.	Boys' High School.
Mulcair, John	Montreal	St. Lambert.
*Poupore, Ray E.	Westmount	Shortell's Academy.
Stalker, Archibald, B.A.	Dutton, Ont.	McGill University.
Tyndale, Orville S., B.A.		
Wanklyn, Andrew Angus, B.A.	Montreal	St. Alban's School, Brockville.

SECOND YEAR.

Allan, Ralph Erskine	Montreal	Private Tuition.
Bernard, Freddy, B.Sc. (Laval)	Beloeil, P.Q.	St. Laurent College.
Bush, Segfried	Montreal	Shortell's Academy.
*Coonan, Thomas Joseph	Montreal	Private Tuition.
deSola, Bram Charles	Montreal	
Delage, Victor Albert	St. Madeleine	
Dixon, Shirley Greenshields, B.A.	Montreal	McGill University.
*Eliasoph, Solomon	Montreal	Quebec H. S.
Heney, Theodore Bigelow, B.A.	Montreal	McGill University.
Herschorn, Hyman Ernest B.A.	Montreal	McGill University.
Knatchbull-Hugessen, Adrian	Montreal	Eton College.
Langstaff, (Mrs.) Annie	Montreal	Prescott H. S.
Livinson, Abraham Jacob, B.A.	Montreal	McGill University.
McGoun, A. Forster, B.A.	Montreal	McGill University.
Macnaughton, Gordon Francis, B.A.	Montreal	McGill University.
Marchand, Louis Phillippe	Victoriaville, P.Q.	Quebec Seminary.
Mills, Arthur L. S., B.A. (Oxford)	Kingston, Ont.	Oxford University.
Moyse, Robert Edwin, B.A.	Montreal	McGill University.
Scott, Henry Hutton, B.A. (Bishop's)	Quebec, P.Q.	Bishop's College.
Tannenbaum, Laurence, B.A.	Montreal	McGill University.
Tritt, Saul	Montreal	Hunter's Academy.

*Partial.

THIRD YEAR.

NAME.	HOME ADDRESS.
Burke, Michael T., B.A. (Laval)	Montreal.
Conroy, Paul S.	Montreal.
Dunlop, James	Montreal.
Elder, Aubrey H., B.A.	Westmount.
Fineberg, Nathaniel S., M.A.	Montreal.
Gillmor, Daniel Percy, B.A.	St. George, N.B.
McDonald, Albert J.	Montreal.
McDougall, Edward Stuart, B.A.	Westmount.
MacNaughton, John, B.A. (N.B.)	Black River, N.B.
Mariotti, H. C. George, B.A.	Montreal.
Mulvena, Henry Robert, B.A. (Laval)	Sherbrooke, P.Q.
Newcombe, Edmund F., B.A.	Ottawa, Ont.
Papineau-Couture, Réné, B.A.	Montreal.
Paré, Joseph Hormisdas	Quebec, P.Q.
Popliger, Isidore	Montreal.
Solomon, Nathan	Montreal.

FACULTY OF AGRICULTURE.

FIRST YEAR.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Biggar, T. Howard	Huntingdon, Q.	Huntingdon Academy.
Boving, Georg B.	Herlufsholm, Kristineham, Sweden	Real Skola, Gothenburg.
Cochrane, Edward S.	Clarenceville, Q.	Clarenceville Model Sch.
Cowper, Hugh S.	Montreal, Q.	Commercial and Tech. High School.
Crothers, Loring W.F.	Stanbridge East, Q.	Stanbridge East Model School.
Fauvell, Philip B.	Pointe St. Peter, Q.	Quebec High School.
Fraser, J. G. Carl	Quebec, Q.	Quebec High School.
Gaetz, John R.	Red Deer, Alta.	Red Deer Public School.
Gordon, Huntley G.	Westmount, Q.	Westmount Academy.
Graves, George Rothwell	Ottawa, Ont.	Ashbury Coll., Ottawa.
Harrington, William S.	Montreal, Que.	Private tuition.
Hay, George C.	Lachute, Q.	Lachute Academy.
Hutchings, Clarence B.	Ste. Anne de Bellevue, Q.	Salt's Grammar School.
Hyndman, Austin E.	Sherbrooke, Q.	Stanstead College.
Jacks, Oliver L.	Oxford, England	Bradfield College, Eng.
Jones, Llewellyn R.	Swanton, Vt.	Kimball Union Academy, Meriden, N.H.
Lemoine, H. Chester	St. Theodore d'Acton, Q.	Feller Institute.
Lemoine, Orville L.	St. Theodore d'Acton, Q.	Feller Institute.
LePetrie, William R.	New Glasgow, Q.	St. Laurent College.

NAME.	HOME ADDRESS.	WHERE LAST EDUCATED.
Lyster, Chester	Kirkdale, Q.	St.Francis Coll.High Sch
McCormick, James H.	Grimsby, Ont.	Harrison College, Barbados.
McDiarmaid, Duncan D.	Entwistle, Alta.	Poplar Lake School, Alta
McOuat, James H.	Lachute, Q.	Lachute Academy.
Manseau, J. B. Romulus	Nicolet, Q.	St. Dunstan's College, Charlottetown, P.E.I.
Martin, Charles R.	Martinville, Q.	Stanstead College.
Mitchell, Homer D.	Drummondville, Q.	Pawtucket, R.I. High School.
Moynan, John C.	Waterloo, Q.	Bishop's College.
Riddell, William A. F.	Moose Jaw, Sask.	Victoria School, Moose Jaw.
Routh, Huntly D.	Westmount, Q.	Wykeham House School, Westmount.
Russell, Charles	New York, N.Y.	Haverford College, Haverford, Pa.
Sharman, Milton P.	Martinville, Q.	Compton, Q.
Smith, Charles L.	Red Deer, Alta.	Alberta College.
Snowden, Milton A.	Notre Dame de Grace, Q.	Westmount Academy.
Ste. Marie, Joseph A.	Moe's River, Q.	Compton, Q.
Turner, William G. M.	St. John's, Newfoundland	Methodist College, St. John's, Nfld.

SECOND YEAR.

NAME.	HOME ADDRESS.
Baily, Hugh R.	London, Eng.
Boyce, George C.	Athelstan, Q.
Creaghan, Gerald F.	Newcastle, N.B.
Evans, Harry I.	Hampton, N.B.
Grisdale, Ralph S.	Pointe Fortune, Q.
Grove, White E.	Kilbyrne, Doneraile, Co Cork, Ireland.
Hacker, James MacMillan	North Bedeque, P.E.I.
Howard, James C.	Smith's Mills, Q.
McKechnie, Richard E.	Wyman, Q.
McLaren, Quentin,	Vereeniging, Transvaal, South Africa.
Matthews, A. E.	St. John's, Nfld.
Oswald, Donald McMartin	Vanklcek Hill, Ont.
Presley, Fred. Y.	Malden, Mass.
Ricker, E. M.	Malden, Mass.
Sutton, Walter E.	Barnston, Q.
Taylor, Andrew G.	Dewittville, Q.
Walker, Clark E.	South Byron, N.Y.
Westbrook, Lawrence J.	Morganville, N.Y.
Williamson, Harold F.	R.R., No. 5. Easton, Pa.
Young, George R.	Boharm, Sask.

THIRD YEAR.

NAME.	HOME ADDRESS.
Coffin, Caryl F.	New York, N.Y.
Cowan, P. R.	Tewkesbury, England.
Drayton, F. Lisle	Hugenden, Bridgetown, Barbados.
Durling, Vernon B.	Lawrencetown, N.S.
Fiske, Hollis J.M.	Florenceville, N.B.
Hamilton, Dr. D. W.	Macdonald College, P.Q.
Hodge, Clarence H.	Cookshire, Q.
Husk, Ray E.	Ulverton, Q.
MacDougall, Winfred G.	Tatehurst, Q.
Macfarlane, John R.	Bristol, Q.
MacFarlane, W. L.	Fox Harbor Pt., Cumberland Co., N.S.
Muir, George W.	Howick, Q.
Newton, William,	Plaisance, Q.
Reed, B. Trenholme	Ulverton, Q.
Ritchie, Thomas F.	Steadman, Q.
Ross, John H.	River John, N.S.
Schafheitlin, Otto	Canning, N.S.
Wilcox, C. J.	Georgeville, Q.

FOURTH YEAR.

Blondin, Edouard N.	Burlington, Vt.
Cooke, Osborne A.	Beech Ridge, Q.
Dash, J. Sydney	Christchurch, Barbados.
Duforts, E. M.	Basseterre, St. Kitts, B.W.I.
Emberley, Arthur E.	Yarker, Ont.
Ford, William D.	Portneuf, Q.
Gibson, William	Borgue, Kirkcudbrightshire, Scotland.
Gorham, Alex. C.	St. John, N.B.
Halliday, George C.	Sawyerville, Q.
Hamilton, R. I.	Levis, Q.
Jenkins, Murray H.	Ottawa, Ont.
King, J. Kenneth,	Smith Creek, N.B.
Lelacheur, Garnet	Murray Harbour, P.E.I.
Lothian, David E.	Edinburgh, Scotland.
MacBean, Kenneth	Larnhall, Scotland.
McClintock, L. D.	St. Andrew's East, Q.
Matthews, Victor,	Pouch Cove, Nfld.
Middleton, William A.	Vernon, B.C.
O'Brien, George E.	Hebron, N.S.
Raymond, A. E.	Woodstock, N.B.
Richardson, Benjamin	Nappan, N.S.
Savoie, F. Narc.	Plessisville, Q.

AFFILIATED COLLEGES.

McGILL UNIVERSITY COLLEGE OF BRITISH COLUMBIA.

(AT VANCOUVER)

(In Arts)

FIRST YEAR.

Agabob, Walter J.
Andersen, Andres P.
Blackberg, Ethel.
Bower, Mabel.
Boyle, Ernest A.
Bunn, Raymond S.
Campbell, William H.
Carr, Nina M.
Carruthers, Bertha M.
Chaloner, Sybil D.
Chapin, Florence B.
Clark, Cuthbert N.
Clarke, Joseph K.
Creery, Ronald H.
Davies-Moore, Fritz.
Dawe, William A.
dePencier, Theodore F. W.
DesBrisay, Merrill.
Dick, Agnes J.
Dobson, Berenice M.
Duncan, Kathleen P.
Duncan, Robert G.
Floyd, Esther.
Foreman, Earl K.
Fountain, Sarah A.
Frame, Eleanor M.
Frampton, Geoffrey.
Gibson, Harold A. F.
Gibson, Thomas L.
Goodman, William E. H. G.
Greggor, Agnes A.
Harvey, Ruth A.
Hatch, Elizabeth A.
Hatch, Charles M.
Hawe, Zella C.
Hill, Annie G.
Hutcherson, Winifred E.
Ireland, Aldyth M.
Jackson, Arnold.
Kearns, William P.
La[illegible]t, Noel D.
Lawrence, James F.
Lockie, George A.
LeMessurier, Ernest.
Lett, Sherwood.
Lewis, Vera M.
Lipsett, Evelyn B.
Low, Donald M.
MacLeod, Jean M.
MacMillan, Isabel G.
McEwen, John G.
McGookin, John.
McIntyre, William.
Maxwell, William F.
Menzies, Alexander M.
Miller, Roland M.
Mulhern, John E.
Munroe, Donald H.
Norris, Roberta L.
O'Neill, Margaret A.
Parker, George W.
Peake, David W.
Rae, Hugh M.
Robertson, Thomas J.
Rogers, Kathleen A.
Scott, Gordon W.
Sexsmith, Franklin B.
Shaw, Hazel L.
Shearman, Eustace R.
Smith, David A.
Southcott, James P.C.
Taylor, Edna M.
Thompson, Clausen.
Thomson, Wesley C.
Timmins, Clifford E.
Trembath, Barbara E.
Uchida, Tose.
Wallace, Bryce H.
Walsh, Harold E.
Warne, Ferne.
Warne, Frank.
Wells, Charles G. P.
Wells, James G.
Wilson, Janet I.
Wilson, William C.
Yarcoe, Minnie E.
York, Kenneth C.

(*In Applied Science*)

FIRST YEAR.

Anderson, Claude W.
Beverly, Ira W.
Cameron, Hamish J.
Creighton, Charles P.
Duchesnay, de St. Denis.
Eckardt, Harold A.
Ferguson, George H.
Fitz-Henry, Edward G.
Grant, Harold D.
Hall, Percival W.
Helme, Harold.
Howell, B. J.
Huston, Alfred H.
Kirkpatrick, Robert H.
Livingstone, Warren.
McGown, Thomas H.
Nicholson, Cuthbert N.
Pearcy, Charles W.
Plummer, Stephen B.
Reid, John H.
Rosebrugh, Kenneth.
Smithson, Hillerie W.
Taylor, Arthur.
Taylor, Frederic C.
Waddington, George W.
Watts, Harold N.
White, Edward M.
Wright, Douglas A.

(AT VICTORIA.)

(*In Arts*).

FIRST YEAR.

Beattie, Mildred K.
Browne, Catherine.
Bunt, Ruby.
Clay, John Leitch.
Emery, Claude Edgar.
Gerow, Albert Augustus.
Graves, Herbert Sandham.
Halliday, Daisy K. C.
Harman, Violet Alice.
Homans, Janet L.
Ledingham, Roy.
Mennie, John Hamilton.
Mess, Eva Beatrice.
McCannell, Don.
McDiarmid, Neil Howard.
Newett, Wm. Stewart.
Richards, Edgar Charles.
Ross, Herbert.
Smith, Lenora Mabel.
Stevenson, John Campbell.
Stewart, Margaret Flora.
Sullivan, Mary Frances.
Tait, Marjorie.
Williscroft, Beatrice.
Yuill, Lionel Shirley

(AT VANCOUVER).

(*In Arts.*)

SECOND YEAR.

Bollert, Lillian G.
Boyes, Francis C.
Brockwell, Muriel A.
Bruce, Graham.
Cameron, Ella G.
Clark, Robert J.
Craig, Gordon
Duncan, Charles A.
Dunton, Marjorie M.
Elliott, Carrie L.
Ewin, Ethel M.
McCreery, Paul L.
Macdonald, Lennie H.
McIver, Angus M.
McNeill, Chester W.
Miller, Grace W.
Mills, Lennox A.
Newton, Edward H.
Pim, Laura M.
Ritchie, Rae G.
Shearman, Arthur E.
Shearman, Thomas S. A.

Galloway, James R.
Gibson, Henry J.
Gilchrist, Neil C.
Grant, Angus M.
Kemp, William N.
Leslie, James A.
Lockyer, Arthur L.
Luckraft, Laurence C.
Smith, Catherine.
Story, Gladys V.
Sutton, William A.
Taylor, William S.
Vermilyea, Ada L.
White, Laura M.
Wilson, Mary L.
Wilson, Robert M.

(THIRD YEAR.)

Balkwill, Anges B.
Buchanan, John H.
Buck, Frank H.
Cousins, Olive E. J.
Currie, Adella L.
Drost, Herbert M.
Greggs, Rubie L.
Hardy, Netta
Howell, Benjamin H.
MacLean, Archibald.
McLean, John J. M.
Macnaghten, Ronald F.
Moodie, Stanley F.
Northrop, Harold.
Ross, Douglas W.
Scott, Cecil O.
Smith, Wilfred M.
Wright, Stephen.

(*In Applied Science.*)

SECOND YEAR.

Cairnes, Olive E.
Carnsew, Charles N. T.
Frame, William L.
Honeyman, Pharic D. I.
Johnson, Bryan P.
McDonald, John A.
Muir, William J. C.
Otton, Cecil.
Perry, Brian R.
Perry, Rolf S.
Shuen, George Y. K.
Swensen, Paul S.
Underhill, Charles B.
Wilson, Arthur L.

(AT VICTORIA)

(*In Arts*)

SECOND YEAR.

Bell, Ralph Kennedy.
Bruskey, Jessie Violet.
Boyden, Dorothy Francis
Dilworth, Ira.
Dowler, John Wilton Douglas.
Gonnason, Emma Louise.
Holland, Alwin.
Penney, Florence May
Ross, Wm. Cameron.

(AT STANSTEAD.)

(*In Arts.*)

FIRST YEAR.

Beach, Hector
Brown, Hazel.
Crawford, Edwin M.
McIntosh, Christina.
Wilson, Frank B.

STUDENTS IN ATTENDANCE, Session 1912-1913.

SUMMARY.

Students in Law		64
Students in Arts, McGill College;—		
Men—Undergraduates	263	
Partials	68	
Women—Undergraduates	128	
Partials	31	
Students in Arts, Vancouver	143	
Students in Arts, Victoria	34	
Stanstead	5	
		672
Students in Applied Science:—		
Undergraduates	521	
Partials	37	
Students in Applied Science, Vancouver	42	
		600
Students in Medicine:—		
Undergraduates	287	
Partials	17	
		304
Students in Music		21
Students in Graduate School		112
Students in Macdonald College:—		
School of Agriculture	95	
School for Teachers	168	
School of Household Science	68	
		331
Total		2104

UNIVERSITY AND GRADUATES' SOCIETIES

The Students' Society of McGill University.

(OFFICERS 1913-1914.)

President—S. G. Dixon, Law '14.
Vice-President—L. H. Roberts, Med. '13.
Treasurer—N. D. Johnston, Arts '15.
Secretary—H. A. Melville.

Executive Council.

S. G. Dixon, Law '14, Chairman.
N. D. Johnston, President Arts Undergraduate Society.
K. F. Keeping, Sci. '14, President Applied Science Undergraduates' Society.
J. A. Couillard, B.A., President Medical Society.
A. K. Hugessen, B.A., President Law Undergraduates' Society.
J. S. Hall, Sci. '14, President McGill Union.
J. C. Lee, Med. '13, President the Rugby Football Club.
L. H. Roberts, Med. '13, President Hockey and Skating Club.
C. S. Mackenzie, Arts '14, President The Track Club.
W. P. Hughes, B.A., President Athletic Association.

The McGill Union.

(OFFICERS 1913-1914.)

President—John S. Hall, Sci. '14.
Vice-President—J. E. H. Paisley, Sci. '15.
Secretary—W. R. Bradford, Arts '15.

"McGill Daily."

(OFFICERS 1913-1914.)

President—John S. Hall.
Editor-in-Chief—Alan E. Oliver.

Undergraduates' Literary and Debating Society.

(OFFICERS 1913-1914.)

Honorary President—Principal Peterson, C.M.G.
Hon. T. U. D. L. Rep.—Dr. S. B. Leacock.
President—D. McGuire, Arts '14.
Vice-President—J. S. Hall, Sci. 14.
Treasurer—R. S. Gale, Arts '14.
Secretary—C. Oughtred, Arts '15.
Assistant Secretary—P. Hutchison, Arts '16.
Committee—J. Bieler, Law '16; R. Struthers, Med. '17.
T.U.D.L. Rep.—H. Farthing, Arts '14.

Undergraduates' Society in Arts.

(OFFICERS 1912-1913.)

President—Henry Morgan, '13.
Vice-President—Royce Gale, '14.
Treasurer—Murray C. Sutherland, '15.
Secretary—Joseph E. Hall, '16.

Undergraduates' Society in Applied Science.

(OFFICERS 1913-1914.)

President—K. F. Keeping, '14.
Vice-President—W. Taylor-Bailey, '14.
Secretary—C. R. Gibbs, '15.
Treasurer—T. F. Francis, '15.
Assistant Secretary—L. C. Nesham, '16.
Reporter—S. C. Mifflen, '14.

Undergraduates' Society in Law.

(OFFICERS 1913-1914.)

President—A. Knatchbull-Hugessen, B.A., '14.
Vice-President—W. Howard, B.A., '15.
Treasurer—Theodore B. Heney, B.A., '14.
Secretary—To be elected.

Medical Society.

(OFFICERS 1913-1914.)

Honorary President—Dr. H. S. Birkett.
President—J. A. Couillard, B.A.
Vice-President—G. A. Fleet, '13.
Treasurer—J. J. Knoll, '14.
Secretary—W. J. Stevens, '15.
Assistant Secretary—J. B. O'Reilly, '16.

Physical Society.

(OFFICERS 1912-1913.)

President—Dr. C. J. Lynde.
Vice-President—Louis V. King, B.A. (Cantab.)
Secretary-Treasurer—Arthur A. Scott, B.A.
Executive Committee—The above-named officers, with Dr. H. T. Barnes and Dr. R. F. Ruttan.

Chemical Society.

(OFFICERS 1912-1913.)

President—Dr. V. J. Harding.
Vice-President—Dr. R. F. Ruttan.
Secretary-Treasurer—R. M. McLean.
Executive Committee—Dr. Barnes and Dr. Stansfield.

Mining Society.

(OFFICERS 1913-1914.)

President—W. A. Glasmacher.
Vice-President—C. O. Fricker.
Secretary-Treasurer—A. L. Dempster.

Historical Club.

(OFFICERS 1913-1914.)

Honorary President—Dr. C. E. Fryer.
President—H. C. Beatty, '15.
Vice-President—W. H. Hyde, '14.
Secretary—E. A. Findlay, '15.
Treasurer—G. F. Dewey, '13.
Committee—Prof. Ludlow and J. H. Bieler.

Electric Club.

(OFFICERS 1912-1913.)

Honorary President—Dr. L. A. Herdt.
Hon. Vice-President—Prof. C. V. Christie.
Secretary—D. J. Hadley, '15.
Treasurer—R. L. A. Strathy, '14.
Councillors—Harold L. Hull, '13; I. R. Tait, '13; R. H. Mather, '13; T. Eardley-Wilmot, '13; Gordon Darling, '13.

The Readers' Club.

No return received.

Philosophical Society.

(OFFICERS 1913-1914.)

Honorary President—Dr. W. Caldwell.
President—H. P. Honey, B.A.
Vice-President—R. M. Ferguson, '14.
Secretary—W. H. Ludington, '15.
Councillors—Dr. J. W. A. Hickson, Dr. W. D. Tait.

The Science '13 Debating Club.

No return received.

Cercle Français.

(OFFICERS 1913-1914.)

Honorary President—Prof. R. Du Roure.
Honorary Vice-President—Prof. L. Perdriau.
President—W. C. Nicholson, B.A., Law '16.
Vice-President—H. Elliott Scott, Arts '14.
Secretary—W. Scriver, Arts '15.
Treasurer—Paul Clark, Arts '15.

Société Française.

(OFFICERS 1913-1914.)

Honorary President—Mlle. Gréterin.
President—Miss J. Goldwater, '14.
Vice-President—Miss J. Boyd, '15.
Secretary-Treasurer—Miss J. Patterson-Smythe, '16.

Delta Sigma Society.

(OFFICERS 1913-1914.)

Honorary President—Miss Cameron.
President—Miss H. Willis, '14.
Vice-President—Miss M. E. Hibbard, '15.
Secretary-Treasurer—Miss J. Patterson-Smythe, '16.
Reporter—Miss Winifred M. Hibbard, '15.

Young Men's Christian Association of McGill.

All members of McGill University, and of the affiliated Colleges, are welcomed as Associate Members; the active membership comprises those who are church members, or who subscribe to a simple statement of faith, and approve the objects of the Association.

The home of the Association is Strathcona Hall, which, in addition to affording ample accommodation for the work of the Association as a whole, provides residence for sixty-seven men.

Full particulars regarding the work of the Association are given in the annual Hand Book, and will also be supplied by the General Secretary of the Association.

(OFFICERS 1913-1914.)

Honorary President—W. M. Birks, Esq.
President—J. R. Buchanan, Arts '13.
1st Vice-President—G. F. Dewey, Arts '13.
2nd Vice-President—M. C. Sutherland, Arts '15.
Recording Secretary—J. A. Coote, Sci. '14.
Treasurer—R. R. Struthers, Med. '17.
Assistant Treasurer—H. C. Beatty, Arts '15.
General Secretary—(To be appointed.)
Assistant Secretary—F. B. Common, Arts '13.
Foreign Secretary—M. G. Brooks, B.A.

CHAIRMEN OF COMMITTEES.

Bible Study—M. C. Sutherland, Arts '15.
Mission Study—H. R. Griffith, Arts '14.
Religious Meetings—G. F. Dewey, Arts '13.
Membership—R. M. Ferguson, Arts '14.
New Students—L. H. Nichols, Arts '14.
Publicity—J. H. West, Med. '15.
Social Service—W. A. Anglin, Sci. '15.
Employment Bureau—S. C. Mifflen, Sci. '14.
Industrial Service—T. J. Bone, Sci. '14.
House—D. Hartin, Med. '14.
Social—C. S. Douglas, Arts '14.
Northfield—J. H. Bieler, Arts '13.

Young Women's Christian Association of McGill University.

(OFFICERS 1913-1914.)

Honorary President—Mrs. F. D. Adams.
President—Miss P. Leslie, '14.
Vice-President—Miss J. Boyd, '15.
Secretary-Treasurer—Miss G. McCaw, '16.

Amateur Athletic Association.

(OFFICERS 1913-1914.)

President—W. P. Hughes, B.A.

Royal Victoria College Athletic Club.

(OFFICERS 1913-1914.)

Honorary President—Miss Lichtenstein.
Honorary Vice-President—Miss Cartwright.
President—Miss I. McCaw, '14.
Vice-President—Miss L. Demuth, '15.
Secretary-Treasurer—Miss M. Currie, '16.

Rugby Football Club.

(OFFICERS 1913-1914.)

Honorary President—Geo. C. McDonald, B.A.
Honorary Treasurer—D. P. Gilmour, Law, '13.
President—J. C. Lee, Med. '13.
Vice-President—A. B. Wilkes, Med. '14.
Secretary—E. H. Paisley, Sci. '15.
Treasurer—H. V. Bignall, Sci. '15.
Captain—G. F. Laing, Med. '15.
Manager— A. F. Argue, Med. '13.

Rifle Association.

(OFFICERS 1913-1914.)

Honorary President—Lt.-Col. H. S. Birkett.
Honorary Vice-President—Capt. Jamieson, 5th R.H.
Honorary Captain—H. E. Cumming, Med. '13.
Captain—James Robertson, Sci. '14.
First Lieutenant and Treasurer—C. M. Horsey, Sci. '14.
2nd Lieutenant—A. I. Cunningham, Sci. '14.
Secretary—L. I. Johnson, Sci. '16.
Squad-Sergeants—H. H. Hemming, Arts'14; H. M. G. Garden, Sci. '14; G. Jacques, Arts '16.

Swimming Club.

(OFFICERS 1913-1914.)

Honorary President—Dr. H. T. Barnes.
President—Lee Smith, Med. '15.
Vice-President—R. E. Stavert, Sci. '14.
Manager—H. E. Herschorn, Law '14.
Secretary—J. B. Thom, Sci. '14.
Treasurer—P. Buckley, Sci. '15.

Lawn Tennis Club.

(OFFICERS 1913-1914.)

Honorary President—Gregor Barclay, B.A.
President—L. C. Hutson, Med. '13.
Vice-President—A. L. S. Mills, Law '15.
Secretary-Treasurer—H. Ross Cleveland, Med. '15.

Railway Club.

(OFFICERS 1912-1913.)

President—J. S. Hall, Sci. '14.
Vice-President—F. A. Parkins, Sci. '14.
Secretary-Treasurer—L. F. Fyles, Sci. '14.
Committee—T. M. Hamer, Sci. '13; A. J. Lawrence, Sci. '14.

Harriers' Club.

(OFFICERS 1913-1914.)

Honorary President—Dr. C. J. Macmillan.
President—R. B. Struthers, Arts '14.
Vice-President—K. Hague, Sci. '14.
Secretary-Treasurer—W. G. Lowry, Med. '16.
Medical Representative—J. D. Moore, Med. '17.
Arts Representative—H. H. Hemming, Arts '14.
Science Representative—D. S. Cole, Sci. '15.

Association Football Club.

(OFFICERS 1913-1914.)

Honorary President—Dr. H. T. Barnes.
President—H. D. Bayne, Med. '13.
Vice-President—Harold Bott, Arts '15.
Secretary—H. E. White, Med. '15.

English Rugby Football Club.

(OFFICERS 1913-1914.)

Honorary President—Professor E. Brown.
President—E. D. Busby, Arts '13.
Vice-President—L. A. Wilmot, Sci. '14.
Secretary—Joseph M. Heap, Sci. '14.
Captain—E. M. Busby, Arts '14.
Executive—Representative of East of Canada—H. A. Murray, Sci. '15; West of Canada, John S. Ney, Sci. '13; U.K., and elsewhere, Peter B. Buckley, Sci. '15.

Hockey and Skating Club.

(OFFICERS 1913-1914.)

Honorary President—A. E. Sargent, Sci. '13.
President—L. H. Roberts, Med. '13.
Vice-President—E. G. Ryley, Sci. '15.
Secretary—J. A. Wickson, Sci. '15.
Treasurer—D. C. Skinner, Arts '14.

Basket Ball Club.

(OFFICERS 1912-1913.)

Honorary President—Dr. H. T. Barnes.
President—C. D. Calder, Sci. '14.
Vice-President—S. G. Baldwin, Med. '16.
Secretary-Treasurer—G. E. Reid, Arts '14.
Manager—C. M. Duffield, Sci. '13.
Assistant Manager—E. M. Busby, Arts '14.

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